

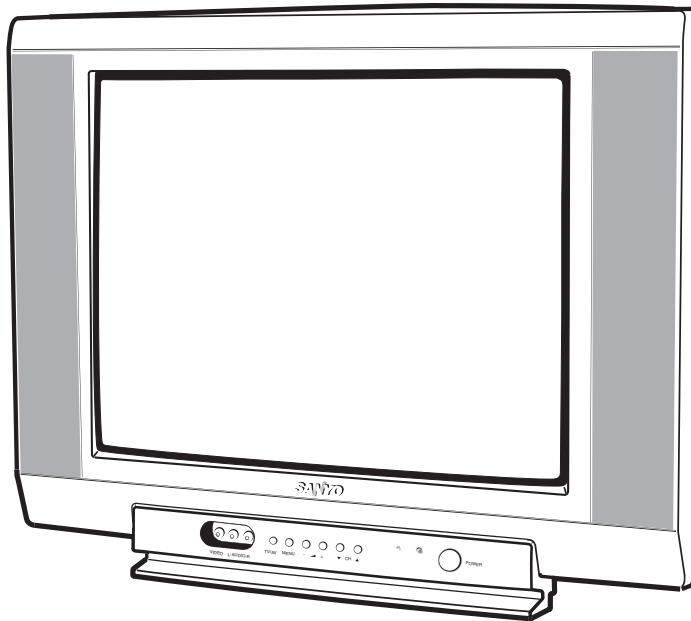
FILE NO.

## SERVICE MANUAL Colour Television

Model No. CT21VF1

(Thailand)

Service Ref. No. CT21VF1-00



### Specifications

**Power Source** . . . . . AC127-240V, 50/60Hz.  
**Colour System** . . . . . PAL, SECAM, NTSC4.43, NTSC, PAL 60Hz  
**Television System** . . . . . B/G, D/KK', I, M/M  
**Channel Coverage** . . . . . VHF: E2-E12, R1-R12, K1-K9, J1-J12, A2-A13  
UHF: 21-69, A14-A69, J13-J62  
CATV: S1-S41, X, Y, Z, Z+1, Z+2

**Video IF** . . . . . 38.0 MHz

**Aerial Input Impedance** . 75Ω

#### Ext. Terminals

Video inputs: Phono jack × 2 (1.0Vp-p, impedance 75Ω)  
DVD Input: Component Video Jack-Y × 1 (1.0Vp-p, impedance 75Ω)  
Component Video Jack CB/CR × 1 (0.7Vp-p, impedance 75Ω)  
Audio inputs: Phono jack (L/R) × 2 (436mVrms, impedance more than 40KΩ)  
Video monitor output: Phono jack × 1 (1.0Vp-p, 75Ω)  
Audio monitor outputs: Phono jack(L/R) × 1(436mVrms, Impedance less than 600Ω)

**Speaker** . . . . . 5 cm × 9 cm × 2 pcs.

**Sound Output (RMS)** . . . 5W + 5W

**Dimensions** . . . . . 580 (W) × 460 (H) × 458 (D)mm

**Weight** . . . . . approx. 20.5 Kg

*Specifications subject to change without notice*

**Product Code: 113012301**

**Original Version**

**Chassis Series: AC7-A**

Give complete "SERVICE REF. NO." for parts order or servicing. It is shown on the rating plate at the cabinet back of the unit.

This T.V. receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specification table.

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## Safety Notice

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### SAFETY PRECAUTIONS

- |  |   |
|--|---|
| <p>1: An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.</p> <p>2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.</p> | <p>3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.. Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.</p> |
|--|---|

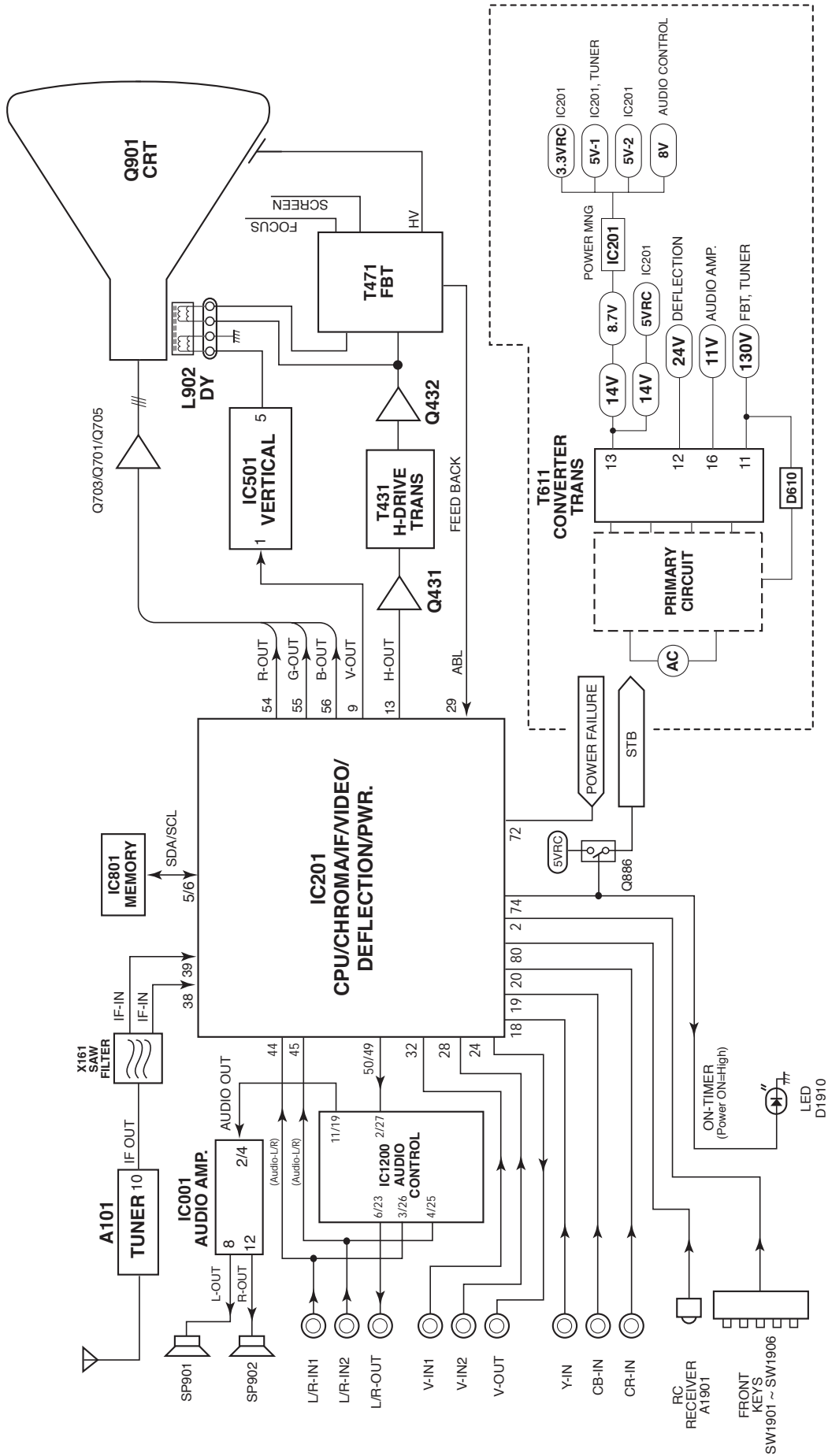
### X-RADIATION PRECAUTION

The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X - RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for + B1 volt power supply adjustment, and high voltage check to maintain the high voltage within the specified limits.

### PRODUCT SAFETY NOTICE

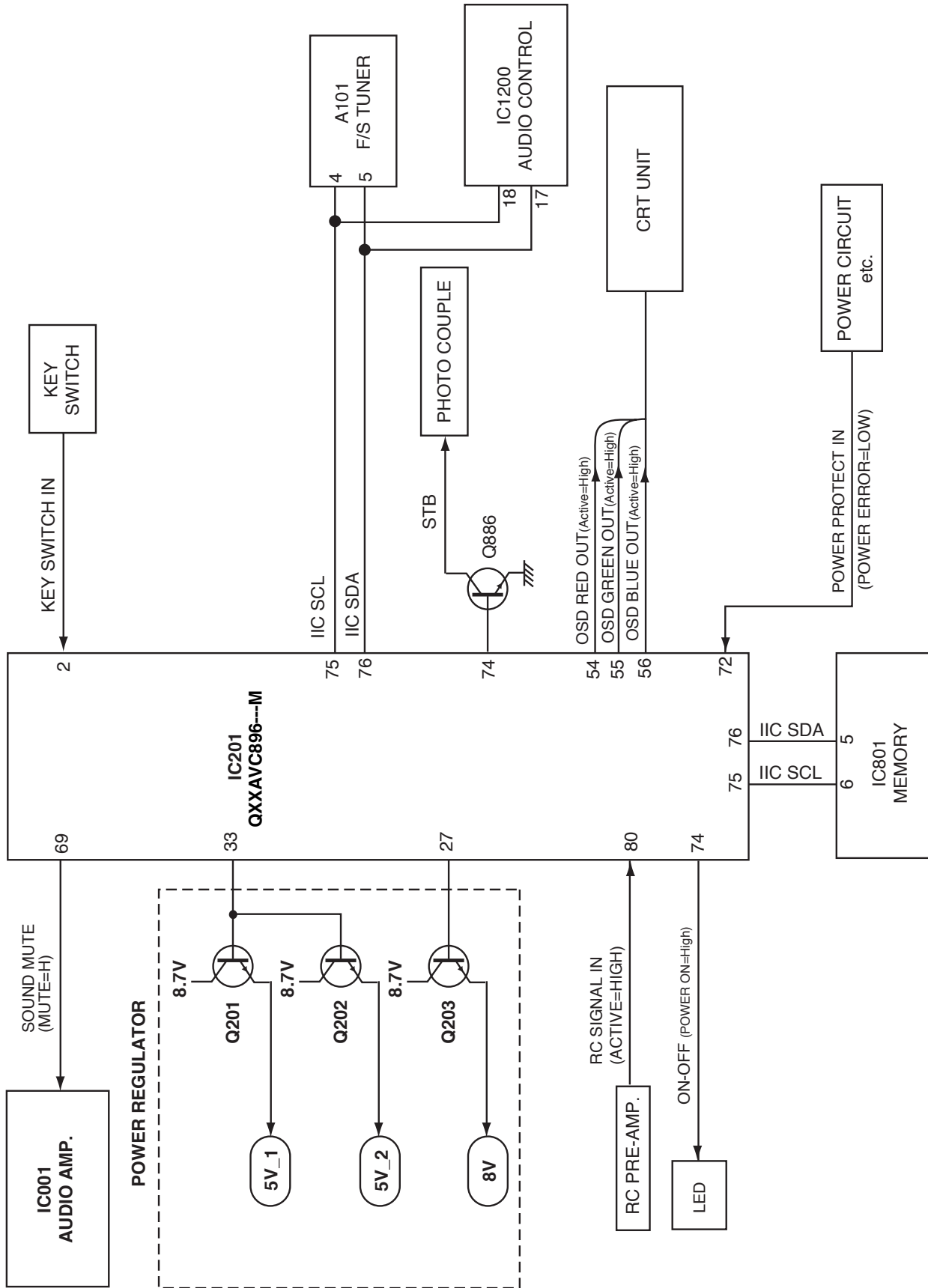
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark  $\triangle$  in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark  $\triangle$  . No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark  $\triangle$  .

# Chassis Block Diagrams



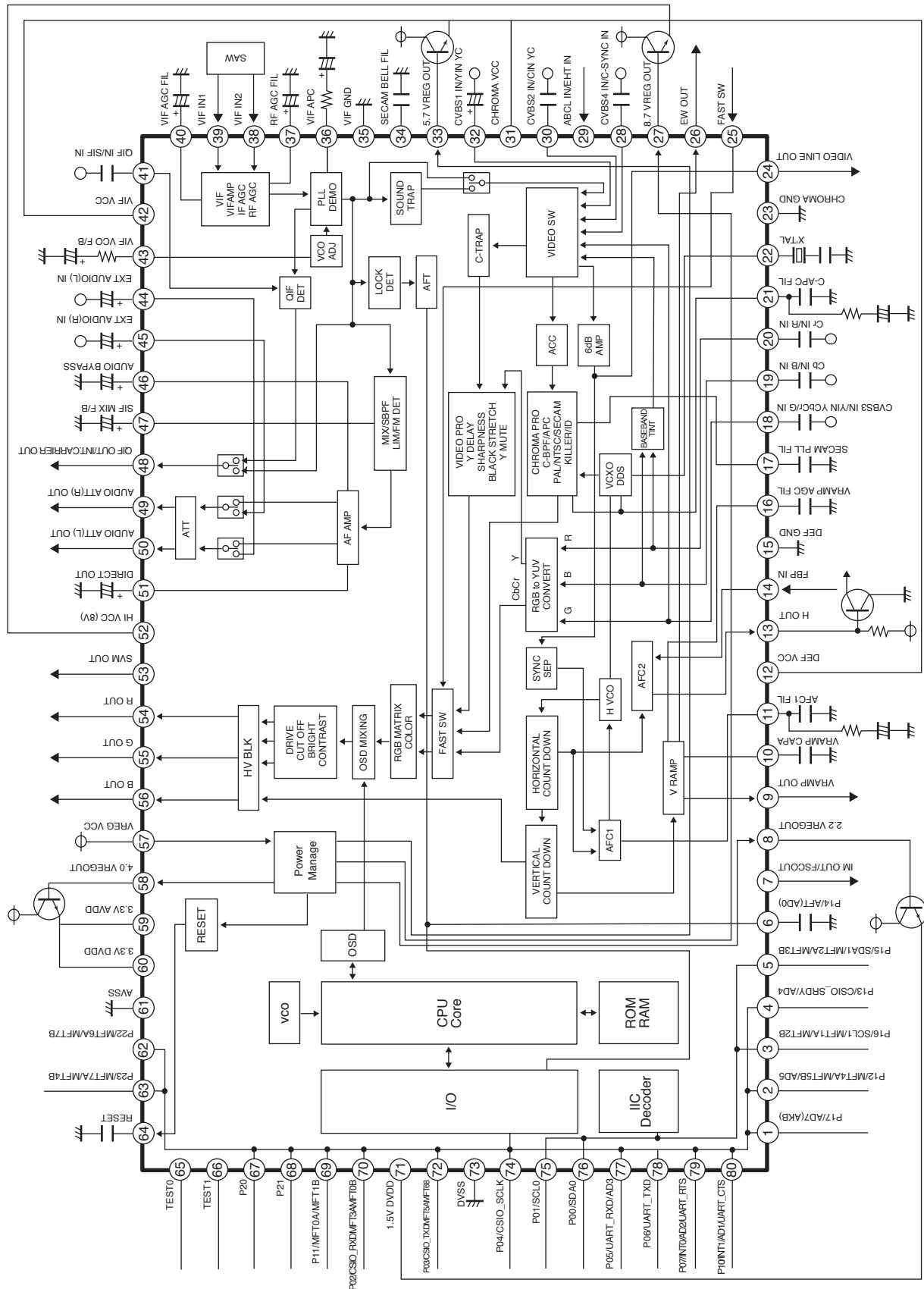
# Chassis Block Diagrams

## System Control



# IC Block Diagrams

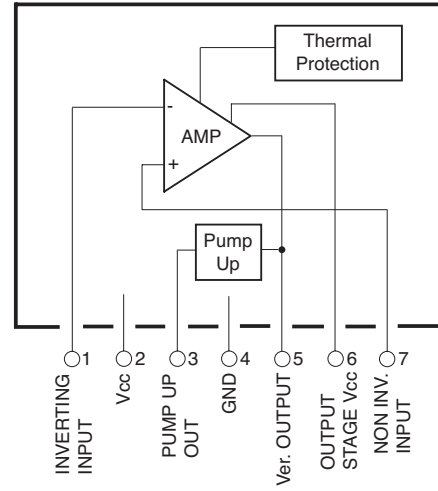
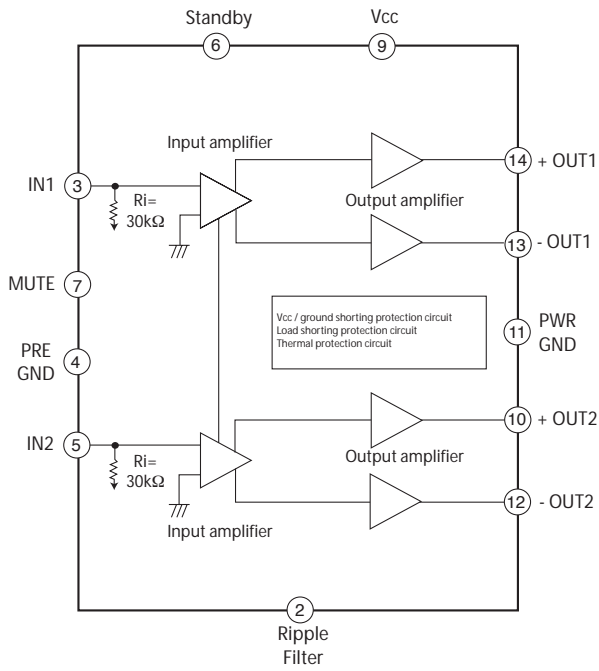
IC201 < CPU/IF/Video/Chroma/Def.> R2J12203M4-XXXFP



# IC Block Diagrams

IC001 < Audio AMP.> LA42205-E

IC501 < Vertical Output > LA78040/LA78040N

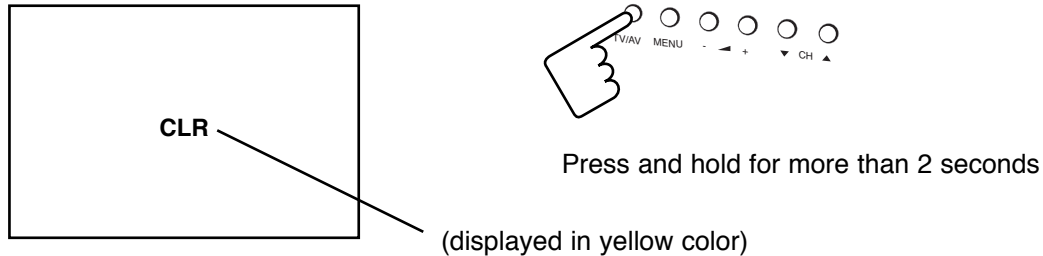


# Service Adjustments with Replacing Memory IC(IC801)

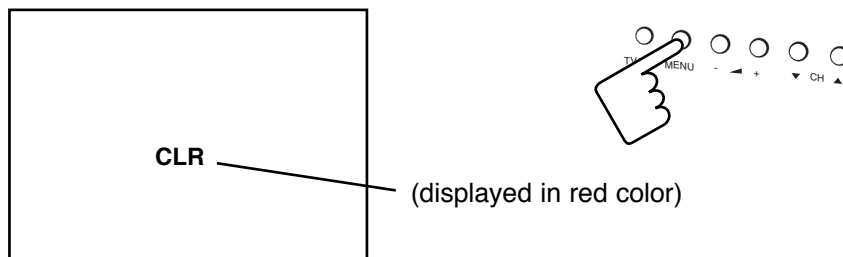
Note: The CPU (IC201) and memory IC (IC801) store the service adjustments data and controls data for each circuit. When the Memory IC (IC801) is replaced, some of the service adjustments should be readjusted to obtain the best performance. The necessary service adjustments are carried out by using the RC handset. Please set up the TV set with following steps [1] to [2].

## [1] Initializing Procedure

1. Put a new memory IC.
2. Turn on the TV set.
3. Press and hold the **TV/AV Selector** on the TV set for more than 2 seconds. The following picture appears on the screen.



4. Press the **MENU** on the TV set while the above On-Screen Display is still on the screen. The following picture appears on the screen.



5. Switch off the TV set by pressing the **Power Switch button** on the TV set while the above On-Screen Display is still on the screen.

This completes the initialization of memory IC.

Following shows the initialized contents of memory data by this procedure.

- Plug & play : No executed
- Inhibit data : Cancelled
- Ch skip data : Cancelled
- Sound volume data : 10/63 steps.
- Volume Lock : OFF
- Colour system : AUTO

## [2] Required Service Adjustments

Readjust the following service adjustments.

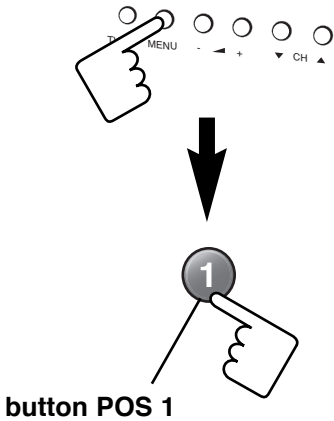
<u>Adjustments</u>	<u>Service Mode No. &amp; Item</u>
RF AGC	Item 105, RF DELAY ADJ
Horizontal centre	Item 18, H-PHA (PAL)
Vertical Position	Item 16, V-SHIFT
Vertical linearity	Item 12, V-LIN
Vertical-S correction	Item 14, V-SCO
Gray scale	Item 167 ~ 171

Further adjustment please refer to page 14 and 15.

# Service Adjustments with Replacing Memory IC(IC801)

## [Entering to Service Mode]

1. Press and hold the **MENU** button on the TV set and press the **numeric 1** button on the Remote Control. Following setting items appears on the screen.

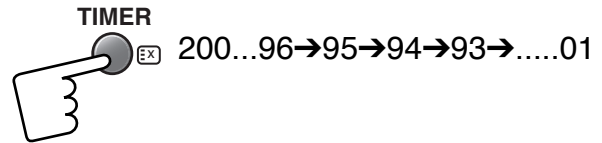
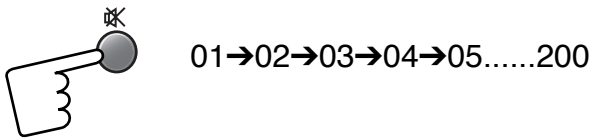


Display for [RF DELAY ADJ] RF AGC adjustment

INDEX	SERVICE MODE ADDRESS	DATA	Version
105	RF DELAY ADJ	2A	2.11

Item No.      Item      Data value

2. Select item by pressing the **SOUND MUTE** (Item No. UP) or **TIMER** (Item No. DOWN) button on the remote control handset.



### Example

Display for [V-SCO] V-S Correction adjustment

INDEX	SERVICE MODE ADDRESS	DATA	Version
12	V S CORRECT 50	2A	2.11

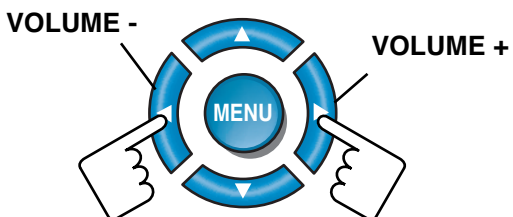
Item No.      Item      Data value

Display for [DRV] White balance adjustment

INDEX	SERVICE MODE ADDRESS	DATA	Version
DRIVER(R) 3F	DRIVER(B) 45		2.11

Item      Data value for Red      Item      Data value for Blue

3. Adjust data value by pressing the **VOLUME +** or **VOLUME -** button on the remote control handset.



To return to normal TV mode, press the **MENU** button on the TV set or the remote control handset.



## Service Adjustments with Replacing Memory IC(IC801)

Following table shows the initial values which have been stored in the CPU ROM, and items for the service adjustments.

### Service mode adjustments table in CPU ROM

No.	Item	Range	Data	Description
01	VIF VCO ADJ	0 ~ 3F	1E	VIF VCO free-running frequency fine adjustment
02	STRAP ADJ	0 ~ 3F	9	SOUND trap free-running frequency fine adjustment
03	H VCO ADJ	0 ~ F	08	HORIZONTAL VCO free running frequency fine adjustment
04	SECAM BLK LEVEL (R)	0 ~ 3F	33	SECAM-(R-Y) signal black level adjustment
05	SECAM BLK LEVEL (B)	0 ~ 3F	11	SECAM-(B-Y) signal black level adjustment
06	V SIZE 50	0 ~ 3F	34	V Ramp amplitude adjustment (Vertical Size) for PAL
07	V-SIZE 50 ZOOM	0 ~ 3F	0	V-Size for Zoom Mode PAL
08	V-SIZE 50 WIDE	0 ~ 3F	0	V-Size for Wide Mode PAL
09	V-SIZE 60	-1F ~ 20	0	V Ramp amplitude adjustment (Vertical Size) for NTSC
10	V SIZE 60 ZOOM	-1F ~ 20	0	V-Size for Zoom Mode NTSC
11	V SIZE 60 WIDE	-1F ~ 20	0	V-Size for Wide Mode NTSC
12	V S CORRECT 50	0 ~ 3F	22	V-S Correction control for PAL
13	V S CORRECT 60	-1F ~ 20	-6	V-S Correction control for NTSC
14	V LINEARITY 50	0 ~ 3F	23	V Linearity control for PAL
15	V LINEARITY 60	-1F ~ 20	3	V Linearity control for NTSC
16	V SHIFT 50	0 ~ F	4	V Ramp start timing point adjustment 2 line/step (V position) for PAL
17	V SHIFT 60	-7 ~ 8	-3	V Ramp start timing point adjustment 2 line/step (V position) for NTSC
18	AFC2 H PHASE 50	0 ~ 1F	F	Horizontal Phase (H-Position) adjustment for PAL
19	AFC2 H PHASE 60	-0F ~ 10	02	Horizontal Phase (H-Position) adjustment for NTSC
20	CONTRAST CONTROL	0 ~ 2F	1F	Contrst Control (Offset Data)
21	BRIGHTNESS CONTROL	0 ~ 3F	33	Brightness Control (Offset Data)
22	TINT CONTROL TV	-3F ~ 40	0	Tint Control (Offset Data) for TV
23	TINT CONTROL AV	-3F ~ 40	0	Tint Control (Offset Data) for AV
24	SERVICE SW	0 ~ 1	0	Vertical Output ON/OFF Switch (Contrast Control)
25	VRAMP OFF	0 ~ 1	0	Vertical Output ON/OFF Switch ON/OFF
26	V AGC SPEED UP	0 ~ 1	0	V Ramp AGC Speed
27	Y/C TEST ON	0 ~ 1	0	
28	HVCO FREERUN UP	0 ~ 1	0	Horizontal free-running frequency up
29	HALF H KILLER	0 ~ 1	0	Composite-Sync Half H Kill
30	H FREE	0 ~ 1	0	Horizontal forced free-running mode switch
31	H START	0 ~ 1	0	Horizontal output switch
32	AFC1 PULL UP	0 ~ 1	1	Horizontal AFC1 gain switch
33	HVCO PULL UP	0 ~ 1	0	Horizontal VCO Filter PULL UP
34	HVCO PULL DOWN	0 ~ 1	0	Horizontal VCO Filter PULL DOWN
35	AFC1 GAIN UP	0 ~ 3	0	Horizontal AFC1 gain switch
36	ACFQ IF CONT	0 ~ 1	1	AFC1 gain controlled by IF AGC
37	DOUBLE COINCI	0 ~ 1	0	Horizontal AFC1 Gain Controlled by FAST Horizontal Coincidence
38	AFC2 RAMP UP	0 ~ 1	0	AFC2 RAMP UP
39	FBP BTHL	0 ~ 1	0	FBP slice level switch
40	AFC2 GAIN UP	0 ~ 3	3	Horizontal AFC2 gain switch
41	HBLK RIGHT	0 ~ 3	1	Control edge of horizontal blanking pulse that is right side of picture
42	HBLK LEFT	0 ~ 3	0	Control edge of horizontal blanking pulse that is left side of picture
43	HBLK SEL	0 ~ 1	1	Horizontal blanking select
44	HD SEL	0 ~ 1	1	Horizontal time pulse for OSD
45	HV BLK OFF	0 ~ 1	0	H and V blanking off switch for RGB-OUT
46	BGP SHIFT	0 ~ 3	0	Burst Gate Pulse for Position Adjustment

## Service Adjustments with Replacing Memory IC(IC801)

No.	Item	Range	Data	Description
47	SECAM BGP SHIFT	0 ~ 3	3	Burst Gate Pulse for Position Adjustment
48	BGP SEL	0 ~ 1	0	Burst Gate Pulse Mode Select
49	PSEUDO H COIN	0 ~ 1	0	Horizontal coincidence detection by fsc counter
50	AUTO SLICE LEVEL	0 ~ 7	0	Sync separator slice level down
51	SECAM BLK LEVEL (B)	0 ~ 1	0	Sync Separator Gain Up at Vertical Sync
52	AUTO SLICE SPEED UP	0 ~ 1	0	Auto Slice Speed Switch (Normal / Up)
53	AUTO SLICE SPEED DN	0 ~ 1	0	Auto Slice Speed Switch (Normal / Down)
54	AUTO SLICE DOWN	0 ~ 1	0	Sync detect level switch during video period.
55	HV FREE	0 ~ 1	0	Horizontal and Vertical forced free-running mode switch
56	V SYNC DET TIME	0 ~ 7	0	Vertical sync detect minimum time switch
57	V SYNC DET MODE	0 ~ 1	1	Vertical sync detect mode select
58	MACRO OFF	0 ~ 1	0	Switch to improvr macrovision signal ON/OFF
59	VBLK STOP	0 ~ 1	0	Vertical blanking stop
60	EQ LATCH OFF	0 ~ 1	0	AFC1 stop timing shift
61	HBLK STOP	0 ~ 1	0	Horizontal blanking stop
62	VRAMP TEST	0 ~ 1	0	Vertical Ramp Out Test
63	V 1 WINDOW	0 ~ 1	0	Vertical sync detect mode select
64	V FREE2	0 ~ 1	0	Vertical free-running mode when horizontal coincidence is low
65	V FREE	0 ~ 1	0	Vertical forces free-running mode switch
66	FORCE V MODE	0 ~ 3	0	Vertical frequency mode switch
67	V STD DET OFF	0 ~ 1	0	Vertical frequency standard / non-standard detection
68	V STD DET2	0 ~ 1	0	Vertical frequency standard / non-standard detection
69	V FREE FREQ	0 ~ 1	0	Vertical free-running frequency
70	OSD VD DELAY	0 ~ 1	0	VD TIMING delay for OSD TIMING
71	W VBLK ON	0 ~ 1	1	Vertical blanking wide mode 16:9
72	VLOGIC STOP	0 ~ 1	0	Vertical count up logic stop
73	VBLK TEST	0 ~ 1	0	V blanking control
74	WIDE VBLK TOP	0 ~ F	0	Vertical blanking top adjustment 16:9
75	WIDE VBLK BOTTOM	0 ~ F	5	Vertical blanking bottom adjustment 16:9
76	OSD CONT CLIP LEVEL	0 ~ 3	1	Contrast control clip level of OSD mode
77	OSD CONT CLIP OFF	0 ~ 1	0	Contrast control clip switch of OSD mode
78	DRIVER (R)	0 ~ 7F	3F	R OUT amplitude adjustment by 7 bits DAC
79	BLUE BACK	0 ~ 1	0	Blue back mode ON/OFF switch
80	DRIVER (R)	0 ~ 7F	3F	B OUT amplitude adjustment by 7 bits DAC
81	WHITE BACK	0 ~ 1	0	White raster mode ON/OFF switch
82	TEST PATTERN	0 ~ 1F	0	SCREEN TEST MODE
83	PEAK ACL	0 ~ 1	0	PEAK ACL MODE ON / OFF
84	ABCL	0 ~ 1	0	ABCL ON / OFF Switch
85	ABCL GAIN	0 ~ 1	0	ABCL Gain Low / High Switch
86	DCT LEVEL	0 ~ 7	0	DC Transfer Level Control
87	DCT ON	0 ~ 1	0	DC Transfer select ON / OFF
88	COLOR CONTROL PAL	0 ~ 10	0	Color Saturation control (Offset Data of Color) for PAL
89	COLOR CONTROL NTSC	0 ~ 10	0	Color Saturation control (Offset Data of Color) for NTSC
90	COLOR CONTROL SECAM	0 ~ 10	0	Color Saturation control (Offset Data of Color) for SECAM
91	TAKE OFF	0 ~ 1	1	Chroma BPF / Take Off switch
92	C KILLER LEVEL	0 ~ 1	0	Color killer sensitivity threshold switch

## Service Adjustments with Replacing Memory IC(IC801)

No.	Item	Range	Data	Description
93	COLOR SYSTEM	0 ~ F	0	Color system selector
94	443NT50 INHIBIT	0 ~ 1	1	Auto color system 443NTSC(50Hz)
95	FSC FREE	0 ~ 1	0	VCXO free-running mode switch ON/OFF
96	FORCE MONO	0 ~ 1	0	Monochrome mode switch
97	FORCE COLOR	0 ~ 1	0	Killer function ON/OFF switch only for manual color mode
98	COND KILLER EN	0 ~ 1	0	Condition Killer Sensitivity Enable
99	1/2FSC TRAP OFF	0 ~ 1	0	Half fsc Trap filter off
100	C BPF OFF	0 ~ 1	0	Chroma DDS OFF
101	CTI	0 ~ 1	1	Color Edge Timing Improvement
102	DDS OFF	0 ~ 1	0	Chroma Bandpass Filter OFF
103	ACC AMP ON	0 ~ 1	0	Chroma ACC AMP FUNCTION
104	C ANGLE 95	0 ~ 1	0	Chroma Demodulation Angle switch
105	RF DELAY ADJ	0 ~ 7F	2A	RF AGC delay point adjustment
106	VIF SYNC ADJ	0 ~ 1	01	Enable VIF video out lamp
107	AFT DEFETAT	0 ~ 1	0	AFT OUT ON/OFF switch
108	VIF REEQ	0 ~ F	0	VIF frequency selector
109	VIF VIDEO OUT GAIN	0 ~ 7	7	VIF Video Detector output amplitude adjustment
110	VIF DEFEAT	0 ~ 1	0	VIF AGC gain
111	AFT REV	0 ~ 1	0	AFT polarity reverse
112	VIF POS	0 ~ 1	0	positive modulation mode
113	STRAP OFF	0 ~ 1	0	SOUND trap test mode switch
114	OM DET	0 ~ 1	0	Vertical frequency standard / non-standard detection
115	VIF AGC CLIP	0 ~ 1	0	VIF AGC sensitivity become low
116	AMF ON	0 ~ 1	0	VIF AGC CURRENT CHANGE ON/OFF switch
117	AMF VTH	0 ~ 7	0	VIF AGC CURRENT CHANGE FUNCTION INPUT LEVEL Adj.
118	VIF AGC VTH HYS OFF	0 ~ 1	0	VIF AGC CURRENT CHANGE FUNCTION HYSTERESIS OFF SWITCH
119	VIF AGC SPEED UP	0 ~ 7	0	VIF AGC SPEED Adj.
120	AUDIO ATT L MONO	0 ~ 7F	7F	L Ch Audio output level attenuation
121	SIF OUT MUTE	0 ~ 1	01	AF direct put out ON/OFF (Mute) switch
122	AUDIO ATT (R)	0 ~ 7F	7F	R Ch Audio output level attenuation
123	SIF OVER MODE	0 ~ 1	0	SIF OVER modulation detector ON/OFF switch
124	AUDIO SW SEL	0 ~ 1F	0	Audio Switch Selector
125	SECAML PC65	0 ~ 1	0	SECAML' Phase Comparator Mode Select
126	CONV VCO PULL UP	0 ~ 1	0	SIF CONVERTER VCO PULL UP
127	CONV VCO BETA UP	0 ~ 1	0	SIF CONVERTER VCO Bup
128	SIF MODE	0 ~ 7	1	SIF Frequency selector
129	AVL SEL	0 ~ 1	0	AVL MODE DELECTOR ON/OFF
130	SIF INT	0 ~ 1	1	
131	SIF BPF WIDE	0 ~ 3	3	SIF BPF band width selector ( For over mode )
132	SIF PAL	0 ~ 3	0	Switch to improve Sound S/N at PAL signal ON/OFF
133	SIF PAL INV	0 ~ 1	0	Switch to improve Sound S/N at PAL signal ON/OFF
134	SIF BPF TEST	0 ~ 1	0	Color Saturation control (Offset Data of Color) for PAL
135	HI TRAP OFF	0 ~ 1	0	Color Saturation control (Offset Data of Color) for NTSC
136	VIDEO SW LPF	0 ~ 1	0	Color Saturation control (Offset Data of Color) for SECAM
137	VIDEO MUTE	0 ~ 1	0	Luminance signal mute ON/OFF
138	SHARPNESS PRE	0 ~ 1F	16	SHARPNESS PRESHOOT LEVEL Adjustment

## Service Adjustments with Replacing Memory IC(IC801)

No.	Item	Range	Data	Description
139	SHARPNESS OVER	0 ~ 1F	0A	SHARPNESS OVERSHOOT LEVEL Adjustment
140	BLK STRETCH OFF	0 ~ 1	0	Black Stretch function ON/OFF switch
141	BLK STRETCH CHARGE	0 ~ 3	1	Charge time constant adjustment for black stretch
142	BLK STRETCH	0 ~ 3	1	Discharge time constant adjustment for black stretch
143	BLK STRTCH GAIN	0 ~ 1	0	Black stretch gain adjustment
144	GAMMA CONTROL	0 ~ 3	3	Luminance gamma threshold control ON/OFF
145	C TRAP ADJ PAL	0 ~ 3	1	Chroma trap for for adjustment PAL
146	C TRAP ADJ NTSC	0 ~ 3	1	Chroma trap for for adjustment NTSC
147	C TRAP OFF	0 ~ 1	0	Chroma trap ON/OFF switch
148	DOUBLE TRAP	0 ~ 1	1	Chroma trap filter for SECAM ON/OFF
149	Y NR TH	0 ~ 3	0	Video Noise Reduction Threshold level change
150	Y NR DEPTH	0 ~ 3	0	Video Noise Reduction Threshold Depth change
151	Y NR ON	0 ~ 1	1	Video Noise Reduction ON
152	Y DL TIME ADJ	0 ~ 7	2	Luminance signal delay time adjustment for PAL
153	Y DL TIME ADJ SECAM	0 ~ 7	4	Luminance signal delay time adjustment for SECAM
154	SECAM KILLER	0 ~ 3	1	SECAM color killer sensitivity threshold adjustment
155	SECAM PLL RST OFF	0 ~ 1	0	SECAM PLL RESET disable
156	SECAM OFF	0 ~ 1	0	SECAM demodulator switch
157	BASEBAND TINT	0 ~ 3F	3F	Base band Tint control for component color signal (DVD)
158	CR DL FINE	0 ~ 1	0	Cr signal delay time adjustment
159	CBCR GAIN UP	0 ~ 1	0	CbCr signal pedestal Gain Switch
160	CBCRPED ADJ ON	0 ~ 1	1	CbCrPED ADJ ON
161	CRPEDESTAL ADJ	0 ~ F	3	Cr signal Pedestal level adjustment
162	CBPEDESTAL ADJ	0 ~ F	4	Cb signal Pedestal level adjustment
163	CB DL FINE	0 ~ 3	0	Cb signal delay time adjustment
164	DL TEST	0 ~ 1	0	1HD TEST MODE
165	R MATRIX PAL	0 ~ 3	1	VIF AGC SPEED Adj.
166	R MATRIX NT DEFFER	-1 ~ 2	1	R matrix gain control for YCbCr (NTSC Offset)
167	WHITE BALANCE			WHITE BALANCE (R-Drive & B-Drive)
168	CUT OFF ( R )	0 ~ FF	00	R OUT Pedestal level adjustment ( R Bias for White balance )
169	CUT OFF ( G )	0 ~ FF	00	G OUT Pedestal level adjustment ( G Bias for White balance )
170	CUT OFF ( B )	0 ~ FF	00	B OUT Pedestal level adjustment ( B Bias for White balance )
171	CUT OFF			One Line
172	FAST SW	0 ~ 1	1	
173	OPT STE MONO	0 ~ 1	1	Option Stereo / Mono (0=Mono; 1=Stereo)
174	OPT VOL TABLE	0 ~ 1	1	Option Volume Table
175	OPT MPP	0 ~ 1	1	Option MPP (0=with MPP; 1=without MPP)
176	OPT BOOSTER	0 ~ 1	1	Option Booster (0=with Booster; 1=without Booster)
177	OPT AV SEL	0 ~ 3	2	Option Audio Video Select
178	OPT COL SYSTEM	0 ~ 2	1	Option Color System
179	OPT SIF SYSTEM	0 ~ 2	2	Option SIF System
180	OPT LG ALPS TCL	0 ~ 2	0	Option Maker Tunner LG , ALPS , TCL
181	OPT PLUG & PLAY	0 ~ 1	0	Option Plug and Play
182	OPT ASIA ME HSE	0 ~ 2	0	Option ASIA Middle East HSE
183	POWER ON TIME	0 ~ FF	0	Power ON Timer
184	OSD H - POSITION	0 ~ FF	3F	OSD Horizontal Position

## Service Adjustments with Replacing Memory IC(IC801)

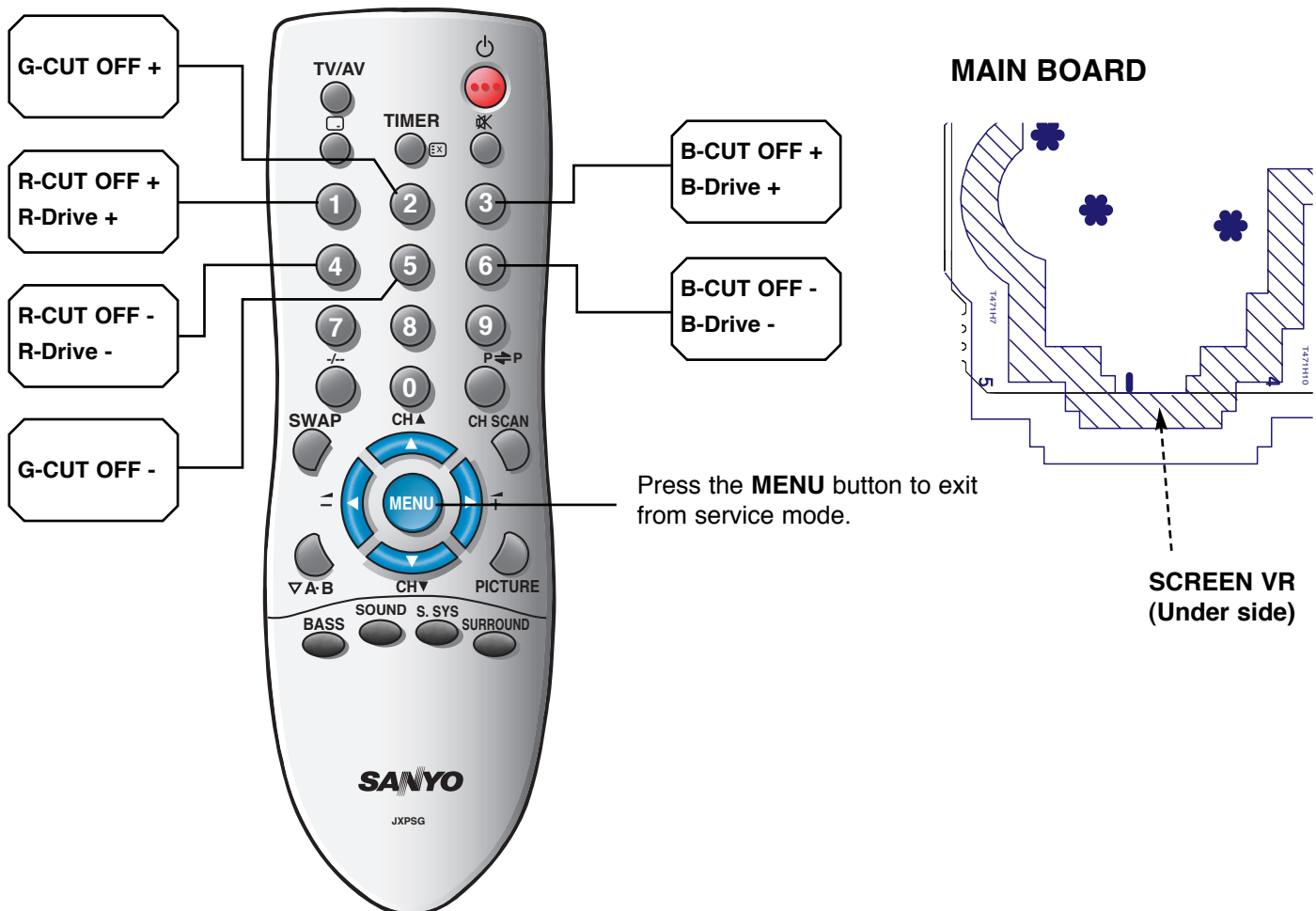
No.	Item	Range	Data	Description
185	OSD V - ( 60 Hz )	0 ~ FF	15	OSD Vertical NTSc
186	VOLUME OFFSET	0 ~ 7	0	Volume Offset
187	BASS OFFSET	0 ~ 7	0	BASS OFFSET
188	TREBLE OFFSET	0 ~ 7	0	TREBLE OFFSET
189	OPT AFT	0 ~ 1	1	0 : For VCO AFT Voltage 2.5 V (WS 1.2) ==> 1 : for (WS 2.0)
190	OPT CHMUTE	0 ~ 1	1	VIDEO MUTE WHEN changing posion 0: NO MUTE 1: MUTE
191	AV TV TIME	0 ~ FF	17	AV -TV change time(mainloop number)
192	BG - STRAP OFFSET	-9 ~ 9	-01	S-TRAP OFFSET for sound strap adjustment BG System
193	DK - STRAP OFFSET	-9 ~ 9	-05	S-TRAP OFFSET for sound strap adjustment DK System
194	I - STRAP OFFSET	-9 ~ 9	2	S-TRAP OFFSET for sound strap adjustment I System
195	M - STRAP OFFSET	-9 ~ 9	1	S-TRAP OFFSET for sound strap adjustment M System
196	BGSUB STRAP OFFSET	-9 ~ 9	-4	S-TRAP OFFSET for sound strap adjustment Bilingual System
197	OPT PAL DK I	0 ~ 1	0	Option SIF System PAL DK I
198	OPT BASS WOOFER	0 ~ 1	0	Option Bass Woofer
199	SECAM CNT	0 ~ FF	5	
200	KEY WORD	0 ~ AC	AC	Key Word

# Service Mode Adjustments

## Items 167 - 171 GREY SCALE

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and colour to normal, contrast to maximum.
- (3) Enter to the service mode.
- (4) Select No. 168 CUT OFF (R), No, 169 CUT OFF (G), and No. 170 CUT OFF (B) and set each data to 0 by pressing the VOLUME + or - key.
- (5) Select No. 167 WHITE BALANCE (R-Drive and B-Drive) and set data to 3F by pressing the VOLUME + or - key.
- (6) Turn Screen Control on the FBT (T471) to minimum (fully counter-clock-wise).
- (7) Select No. 171 (1-line appear).
- (8) Advance Screen Control clockwise to obtain just visible one colour line. If line does not appear, place this control to maximum (fully clockwise).
- (9) Raise each CUT OFF Level with 1, 2, 3, 4, 5 and 6 keys to obtain just visible white line.
- (10) Select No. 167 WHITE BALANCE (Drive Adjustments).
- (11) Adjust Red and Blue Drive Levels alternately with 1, 3, 4 or 6 key to produce normal black and white picture in highlight areas.
- (12) Check for proper grayscale at all brightness levels. To turn off the TV Service Menu display, press the MENU key.

**Note:** If the Grayscale adjustment is made after picture tube replacement, check the High Voltage



# Service Mode Adjustments

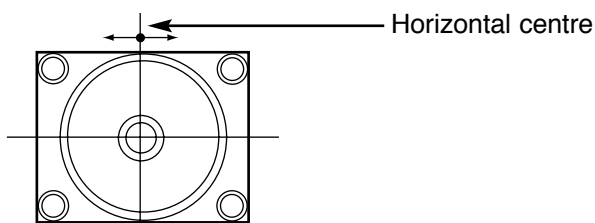
Following adjustments should be carried out when the memory IC is replaced. How to enter the service mode and adjust values, please refer to "Entering to Service mode" on page 8.

## Item 105 [RF DELAY ADJ] AGC ADJ

- NOTE: Do not attempt this adjustment with weak signal.
- (1) Tune the receiver to most clearest (or strongest) VHF station in your area. Set the brightness and contrast controls to maximum. Set the colour control to minimum.
  - (2) Select [RF DELAY ADJ] in the service mode.
  - (3) Change value until the snow noise just disappears.
  - (4) Exit from service mode.

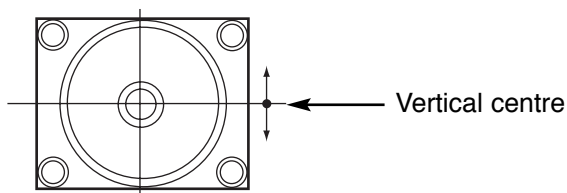
## Item 18 [AFC2 H-PHASE 50] HORIZONTAL ADJ

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and contrast to normal.
- (3) Select [AFC2 H-PHASE 50] in the service mode.
- (4) Change value to be optimum horizontal centre position.
- (5) Exit from service mode.



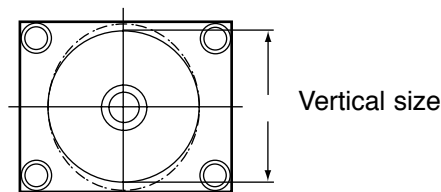
## Item 16 [V-SHIFT 50] VERTICAL CENTRE

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and contrast to normal.
- (3) Select [V-SHIFT 50] in the service mode.
- (4) Change value to be optimum vertical centre position.
- (5) Exit from service mode.



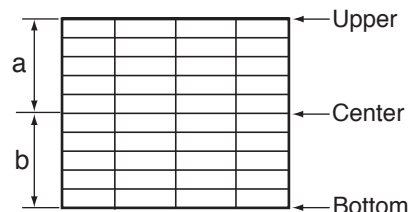
## Item 6 [V-SIZE 50] VERTICAL SIZE

- (1) Receive a monochrome circular pattern..
- (2) Set the brightness and contrast to maximum.
- (3) Select [V-SIZE 50] in the service mode.
- (4) Change value to be optimum vertical size.
- (5) Exit from service mode.



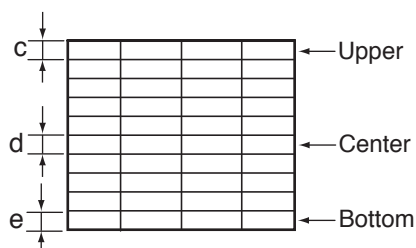
## Item 14 [V-LINEARITY 50] VERTICAL LINEARITY

- (1) Receive a crosshatch pattern.
- (2) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
- (3) Select [V-LINEARITY 50] in the service mode.
- (4) Adjust Vertical Linearity so that the difference of "a" and "b" becomes less than 3mm by pressing VOLUME + or - button.
- (5) Exit from service mode.



## Item 12 [V S CORRECT 50] V-S CORRECTION

- (1) Receive a crosshatch pattern.
- (2) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
- (3) Select [V S CORRECT 50] in the service mode.
- (4) Adjust Vertical S-letter Correction so that the difference of "c", "d" and "e" becomes less than 2 mm by pressing the VOLUME + or - button.
- (5) Confirm Vertical Linearity and adjust Vertical Center then Vertical Size.
- (6) Exit from service mode.



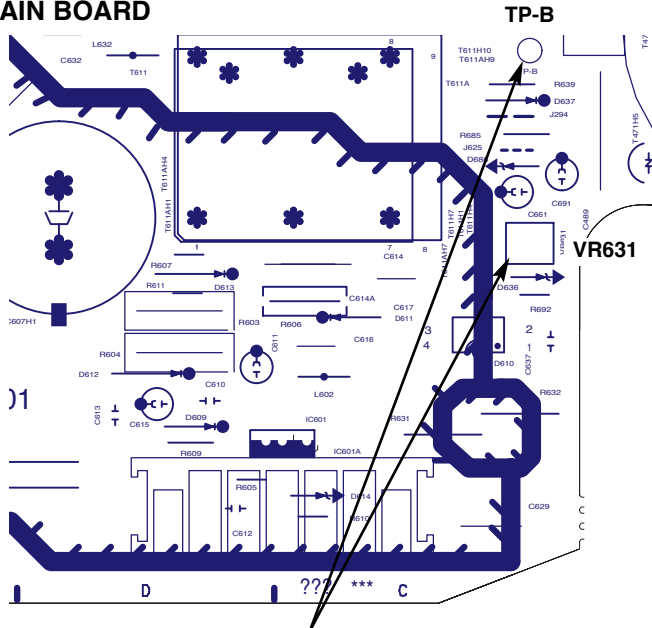
# Service Adjustments

Following adjustments are not required to readjust when replacing the memory IC.

## B-VOLTAGE SUPPLY CHECKING

- (1) Connect DC meter to TP-B and the ground.
- (2) Tune the receiver to an active channel and synchronized picture. Select NATURAL picture mode by pressing the **PICTURE MODE** button on the remote control.
- (3) Adjust B-voltage to be  $130 \pm 0.5V$  DC by using VR631.

### MAIN BOARD



## HIGH VOLTAGE CHECK

**Note:** +B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

- (1) Connect high voltage voltmeter negative lead to ground, and connect + lead to anode of picture tube.
- (2) Tune receiver to an active channel and confirm TV is operating properly.
- (3) Maximize the beam current by adjusting the contrast and brightness controls to maximum. Confirm high voltage is within 24.0 KV and 26.0 KV at maximum beam current.
- (4) Eliminate the beam current by adjusting the contrast and brightness controls to minimum. Confirm high voltage does not exceed 27.5 KV at zero beam current.

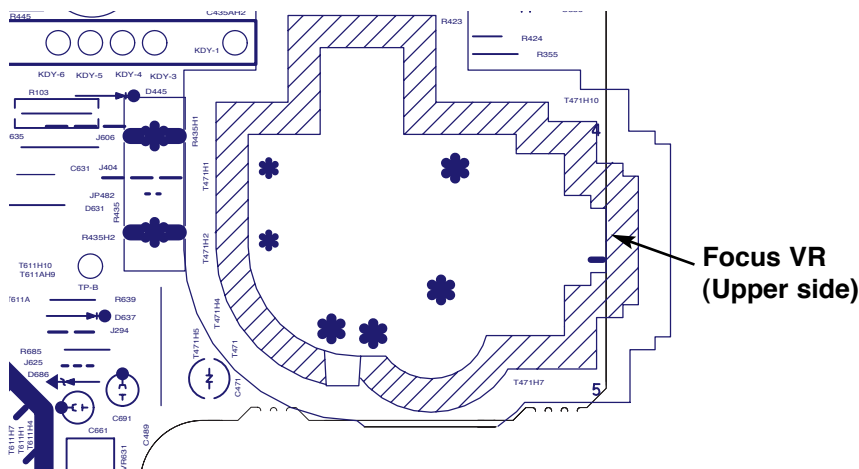
If reading is not within range, check horizontal circuit.  
No high-voltage adjustment is provided on this chassis.

### B-Voltage Supply Adjustment

## FOCUS ADJUSTMENT

- (1) Receive the monochrome circular pattern.
- (2) Set the brightness to normal and contrast to maximum.
- (3) Adjust the focus control on the F.B.T. for the best focus on the screen centre.

### MAIN BOARD





# Special Function

The following special functions can be set up on this TV set.

## (1) Volume Lock setting

With this function, a maximum sound volume limit can be set at any level.



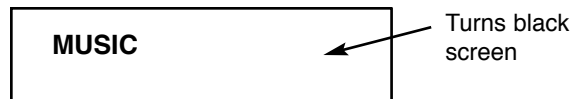
## (2) Tuning Lock setting

Once TUNING LOCK is switched on, further channel tuning (Pre-set) is not possible. The Channel Swapping function also is not possible.



## (3) Music Mode setting

When Music Mode is ON, Programme position from "247" to "255" and "0" are set Music Mode. Only sound is provided and any picture is not on the screen under Music Mode.



## (4) AV Start setting

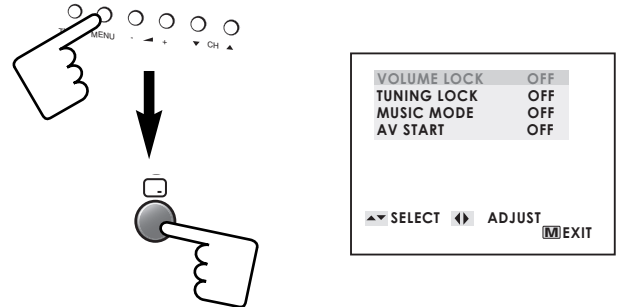
Set AV-START to ON and every time the TV set is switched on, AV1 position will be the initial programme position.



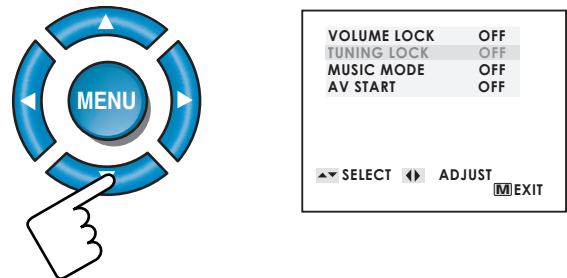
## How to set the special function:

**Note:** When making the VOLUME LOCK setting, set the desired maximum sound volume by pressing the **VOLUME +** or **-** button before entering Special Function setting mode.

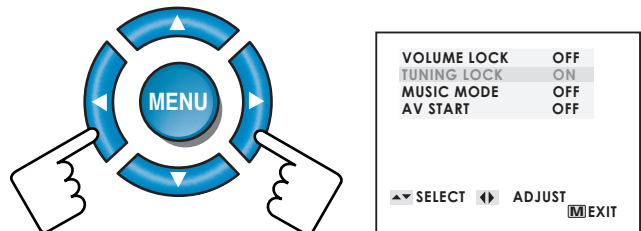
- 1 To enter into the special function setting mode, press and hold the **MENU** button of the TV set, then press the **Recall** button on the Remote Control.



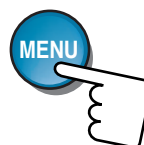
- 2 Select an item of the special functions by pressing the **PROGRAMME UP** or **DOWN** button on the remote control or the TV set.



- 3 Set the selected special function "ON" by pressing the **VOLUME +** or **-** button. To cancel, set to "OFF".



- 4 Press the **MENU** button of the remote control to return to the normal TV mode.



# Purity and Convergence Adjustment

**CAUTION:** The Convergence and Purity adjustments have been made at the factory. Readjustment should be made only after picture tube or deflection yoke replacement, following the steps below:

## PURITY ADJUSTMENT

1. Demagnetize the picture tube and receiver using an external degaussing coil. When replacing picture tube or deflection yoke, mount deflection yoke and purity-convergence magnets assembly properly, see figures 1 and 4.
2. Turn Red and Blue guns off and provide only Green raster. Rotate Screen control to fully counterclockwise. Rotate Red and Blue Bias controls fully counterclockwise. Slowly rotate Green Bias control clockwise to produce Green raster.
3. Loosen the screw holding the Deflection Yoke and remove the 3 Rubber Wedges, and slide the Deflection Yoke fully forward.
4. Rotate and spread the Tabs of the two Purity Magnets to centre the vertical green belt in the picture screen. The Purity Magnets are also adjusted to obtain vertical centring of the raster.
5. Slowly slide the Deflection Yoke backward until a uniform green screen is obtained.
6. Check the purity of the red and blue screens for uniformity, turn off other colours to check this (use bias controls). Readjust the yoke position if necessary until all screens are pure.
7. Adjust each Bias control and screen control to obtain white raster. Refer to Gray Scale Adjustment. If part of the picture screen is coloured, adjust the Deflection Yoke position forward or backward slightly.

8. Tighten the mounting screw of the Deflection Yoke. Adjust Convergence next.

## CENTRE CONVERGENCE ADJUSTMENT

1. Use a dot crosshatch pattern signal.
2. Turn Red and Blue guns on and turn off Green gun. Adjust the angle between the Tabs of the Four Pole Magnet 1 and 2, and superimpose the Red and Blue vertical lines in the centre area of the picture screen. Refer to figure 2.
3. Keeping the mutual angle of the Tabs of the Four Pole Magnet turn them together to superimpose the Blue and Red horizontal lines in the centre area of the picture screen. Refer to figure 2.
4. Turn Green gun on and adjust Six Pole Magnet 3 and 4 that the Green line superimposed on the Red/Blue lines. This is the same procedure used in steps 2 and 3. Refer to figure 3.

## OUTER AREA CONVERGENCE ADJUSTMENT

Slightly loosen the screw holding the Deflection Yoke. Adjust the Deflection Yoke to converge the detail in the outer area (left side and right side) of the picture screen by orbital movement of the front of the Yoke, then secure the Deflection Yoke in appropriate position by putting the wedges as illustrated. Tighten screw holding the Deflection Yoke.

**Note:** The form of deflection yoke changes with models.

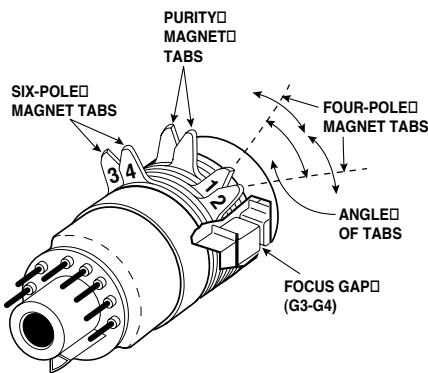


Figure 1. Purity and Convergence Magnets

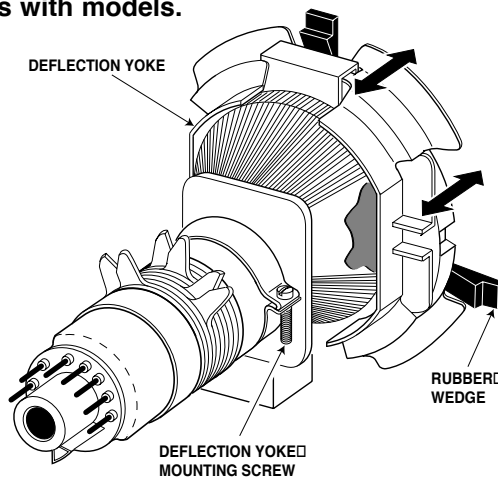


Figure 4. Deflection Yoke Movement

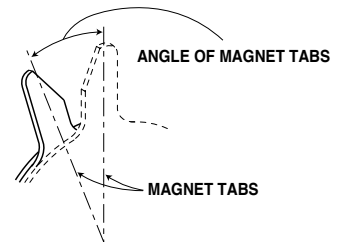


Figure 5. Adjusting Magnet

<p>Adjust tabs angle to superimpose blue and red vertical line.</p> <p>Adjust tabs together to superimpose red and blue horizontal line.</p> <p>RED</p> <p>BLUE</p> <p>Figure- 2 BLUE AND RED LINE MOVEMENT</p>	<p>Adjust tabs angle to superimpose red/blue and green vertical line.</p> <p>Adjust tabs together to superimpose red/blue and green horizontal line.</p> <p>GREEN</p> <p>BLUE / RED</p> <p>Figure- 3 BLUE/RED AND GREEN MOVEMENT</p>
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# Mechanical Disassembly

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## CABINET BACK REMOVAL

1. Refer to Figure 1, remove 7 screws.
2. Pull off cabinet back and remove.

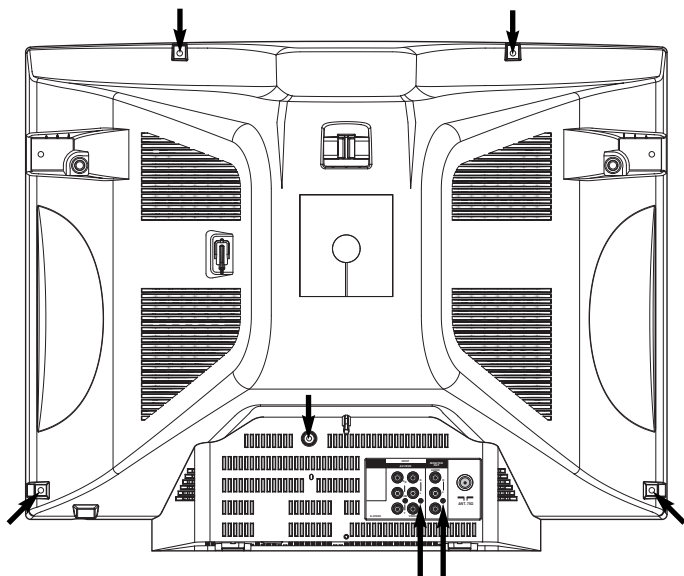


Figure 1. Cabinet Back Removal

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## Protection Circuit

This TV set has a built-in power supply protection circuit.

It is provided to protect the TV set in case of a power supply circuit malfunctions. When something abnormality occurs during TV reception, the TV set goes to the stand-by mode.

When an abnormality occurs during TV reception, it causes pin 72 of the Processor to go continually Low (less than 2.0V) for about 2 second. The Processor detects that this has occurred and outputs the signal from pin 74 to switch off the power supply lines.

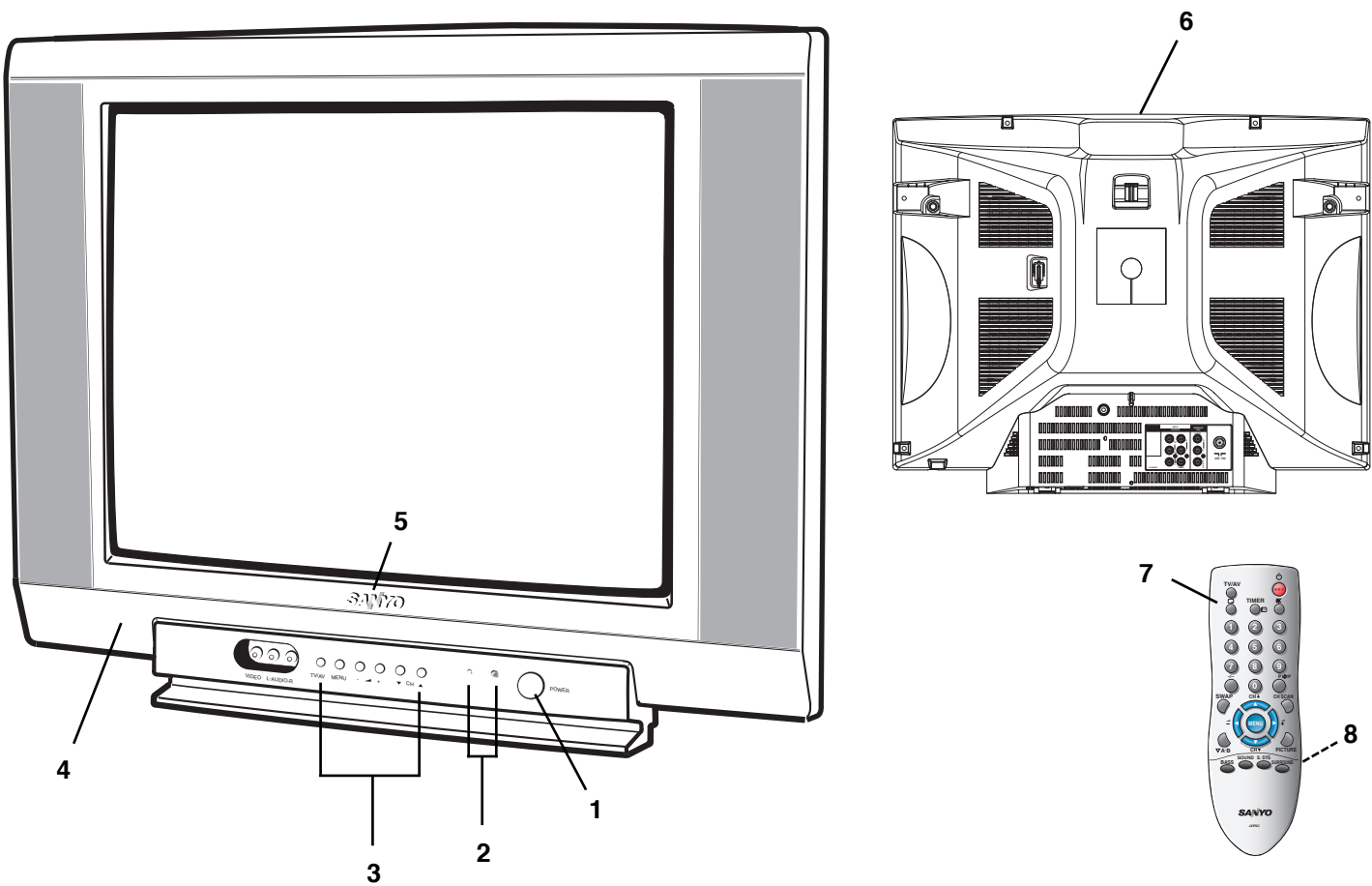
### ■ Releasing the protective circuit and restoring power supply

To release the protective circuit and restore power supply, turn the power to the TV set OFF and then ON again via either the main power switch or the ON-OFF button on the remote control. This will work only if the power supply trouble was temporary. If there is permanent trouble such as a damaged circuit, power cannot be restored and the circuit will have to be repaired.

# Cabinet Parts List

BD6B

Note: Parts order must contain Service Ref. No., Part No., and descriptions.



Key No.	Part No.	Description	Key No.	Part No.	Description
1	610 331 7175	BUTTON POWER-BB2A			
	610 229 8406	SPRING-E3HA (for power button)			
2	610 331 7274	DEC IND-BB2A			
3	610 331 7380	BUTTON UNITED-BB2A			
4	610 335 2978	CABINET FRONT-BD6A			
5	645 069 2185	BADGE,SANYO*43.5X10L43.5			
6	610 335 3012	CABINET BACK-BD6A			
7	652 002 0634	REMOCON,JXPSG			
8	610 313 3393	RC-BATTERY LID-JXPLA			
	610 335 3050	INSTRUCTION MANUAL-C8WC			
	610 338 0674	CORRECTION NOTICE-C8WM			
	610 335 3104	SCHEMATIC DIAGRAM-C8WC			

# Chassis Electrical Parts List

BD6B

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a  $\Delta$  mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Parts order must contain Service Ref. No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<p><b>NOTES:</b> Read description in the Capacitor and Resistor as follows:</p> <p><b>CAPACITOR</b> CERAMIC 100P K 50V</p> <div style="margin-left: 40px;"> <p>Rated Voltage</p> <p>Tolerance Symbols: Less than 10pF A : Not specified B : <math>\pm 0.1\text{pF}</math> C : <math>\pm 0.25\text{pF}</math> D : <math>\pm 0.5\text{pF}</math> F : <math>\pm 1\text{PF}</math> G : <math>\pm 2\text{pF}</math> R : <math>\pm 0.25\text{-}0\text{pF}</math> S : <math>\pm 0\text{-}0.25\text{pF}</math> E : <math>\pm 0\text{-}1\text{pF}</math></p> <p>More than 10pF A : Not specified B : <math>\pm 0.1\%</math> C : <math>\pm 0.25\%</math> D : <math>\pm 0.5\%</math> F : <math>\pm 1\%</math> G : <math>\pm 2\%</math> H : <math>\pm 3\%</math> J : <math>\pm 5\%</math> K : <math>\pm 10\%</math> L : <math>\pm 15\%</math> M : <math>\pm 20\%</math> N : <math>\pm 30\%</math> P : <math>\pm 100\text{-}0\%</math> Q : <math>\pm 30\text{-}10\%</math> T : <math>\pm 50\text{-}10\%</math> U : <math>\pm 75\text{-}10\%</math> V : <math>\pm 20\text{-}10\%</math> W : <math>\pm 100\text{-}10\%</math> X : <math>\pm 40\text{-}20\%</math> Y : <math>\pm 150\text{-}10\%</math> Z : <math>\pm 80\text{-}20\%</math></p> <p>Rated value: P=pico farad, U=micro farad</p> </div> <p>Material: CERAMIC..... Ceramic MT-PAPER..... Metallized Paper POLYESTER..... Polyester MT-POLYEST.....Metallized Polyester POLYPRO..... Polypropylene MT-POLYPRO.....Metallized Polypropylene COMPO FILM..... Composite film MT-COMPO.....Metallized Composite STYRENE..... Styrene TA-SOLID..... Tantalum Solid AL-SOLID..... Aluminium Solid ELECT..... Electrolytic NP-ELECT..... Non-polarised Electrolytic OS-SOLID..... Aluminium Solid with Organic Semiconductive Electrolytic DL-ELECT..... Double Layered Electrolytic</p> <p><b>RESISTOR</b> CARBON 4.7K J A 1/4W</p> <div style="margin-left: 40px;"> <p>Rated Wattage</p> <p>Performance Symbols: A: General B: Non flammable Z: Low noise Other: Temperature coefficient</p> <p>Tolerance Symbols: A: <math>\pm 0.05\%</math> B: <math>\pm 0.1\%</math> C: <math>\pm 0.25\%</math> D: <math>\pm 0.5\%</math> F: <math>\pm 1\%</math> G: <math>\pm 2\%</math> J: <math>\pm 5\%</math> K: <math>\pm 10\%</math> M: <math>\pm 20\%</math> P: <math>\pm 5\text{-}15\%</math></p> <p>Rated value, ohms: K: 1,000, M: 1,000,000</p> </div> <p>Material: CARBON..... Carbon MT-FILM..... Metal Film OXIDE-MT..... Oxide Metal Film SOLID..... Composition MT-GLAZE..... Metal Glaze WIRE WOUND... Wire Wound CERAMIC RES.. Ceramic FUSIBLE RES.... Fusible</p>			<p><b>OUT OF CIRCUIT BOARD</b></p> <p><b>PICTURE TUBE</b></p> <p><math>\Delta</math> Q901 4140147809 CRT ASSY A51QDX993X005 (A) Q901-1 6450088674 MAGNET, CG, PR 6450867484 MAGNET, CG, PR Q901-2A 6101170154 DY SPACER-D4AK 6102337891 DY SPACER E2HA 6102904154 DY SPACER-F8LZ Q901-2B 6101170154 DY SPACER-D4AK 6102337891 DY SPACER E2HA 6102904154 DY SPACER-F8LZ Q901-2C 6101170154 DY SPACER-D4AK 6102337891 DY SPACER E2HA 6102904154 DY SPACER-F8LZ</p> <p><b>COIL</b></p> <p><math>\Delta</math> L901 6450837616 ASSY, COIL, DEGAUSSING</p> <p><b>MISCELLANEOUS</b></p> <p>SP901 6520014831 SPEAKER, 8 6520018174 SPEAKER, 8 SP902 6520014831 SPEAKER, 8 6520018174 SPEAKER, 8 <math>\Delta</math> W901 6450956287 CORD, POWER-2.0MK-W-A5063 W902 6102837179 ASSY, WIRE GND CONNECTOR C</p> <p style="text-align: center;"><b>6103366463 ASSY, PWB, MAIN BD6B 1AA0B10S251JA</b></p> <p><b>TRANSISTOR</b></p> <p>Q1001 4051648016 TR KTA1504S-GR-RTK 4051345925 TR 2SA1037AK-T146-R 4051472215 TR 2SA1037AK-S-T146 4050020318 TR 2SA1037K T146 R 4050020417 TR 2SA1037K T146 S 4050026726 TR 2SA1179-M6-TB 4050026924 TR 2SA1179-M7-TB 4051631513 TR 2SA1179N-M6-TB 4051739615 TR 2SA1235A1E 4051739714 TR 2SA1235A1F Q1002 4051648016 TR KTA1504S-GR-RTK 4051345925 TR 2SA1037AK-T146-R 4051472215 TR 2SA1037AK-S-T146 4050020318 TR 2SA1037K T146 R 4050020417 TR 2SA1037K T146 S 4050026726 TR 2SA1179-M6-TB 4050026924 TR 2SA1179-M7-TB 4051631513 TR 2SA1179N-M6-TB 4051739615 TR 2SA1235A1E 4051739714 TR 2SA1235A1F Q1003 4051648412 TR KTC3875S-GR-RTK 4050144519 TR 2SC2412K T146 R 4050144618 TR 2SC2412K T146 S 4050158724 TR 2SC2812-L6-TB</p>		



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C1011	4041044900	CERAMIC 0.1U K 50V		4033456615	CERAMIC 1U M 10V
	4040912606	CERAMIC 0.1U K 50V	C1222	4033588316	CERAMIC 1U K 10V
	4033670417	CERAMIC 0.1U K 50V		4033456615	CERAMIC 1U M 10V
C1012	4040970101	ELECT 1U M 50V	C1223	4033588316	CERAMIC 1U K 10V
	4040843801	ELECT 1U M 50V		4033456615	CERAMIC 1U M 10V
C104	4040973607	ELECT 47U M 50V	C1224	4033588316	CERAMIC 1U K 10V
	4040844303	ELECT 47U M 50V		4033456615	CERAMIC 1U M 10V
C106	4040973201	ELECT 22U M 50V	C1225	4033588316	CERAMIC 1U K 10V
	4040873006	ELECT 22U M 50V		4033456615	CERAMIC 1U M 10V
C111	4041032907	CERAMIC 0.01U K 50V	C1226	4033588316	CERAMIC 1U K 10V
	4040901204	CERAMIC 0.01U K 50V		4033456615	CERAMIC 1U M 10V
	4032152211	CERAMIC 0.01U K 50V	C1228	4033588316	CERAMIC 1U K 10V
C112	4041032907	CERAMIC 0.01U K 50V		4033456615	CERAMIC 1U M 10V
	4040901204	CERAMIC 0.01U K 50V	C124	4040970101	ELECT 1U M 50V
	4032152211	CERAMIC 0.01U K 50V		4040843801	ELECT 1U M 50V
C114	4041032907	CERAMIC 0.01U K 50V	C125	4040972808	ELECT 0.47U M 50V
	4040901204	CERAMIC 0.01U K 50V		4040843702	ELECT 0.47U M 50V
	4032152211	CERAMIC 0.01U K 50V	C126	4032002625	ELECT 0.47U M 50V
C115	4040972808	ELECT 0.47U M 50V	C127	4041040209	CERAMIC 100P J 50V
	4040843702	ELECT 0.47U M 50V		4040946403	CERAMIC 100P J 50V
C1201	4040988205	ELECT 2200U M 10V		4031573611	CERAMIC 100P J 50V
	4040854906	ELECT 2200U M 10V	C1902	4040973201	ELECT 22U M 50V
C1202	4041044900	CERAMIC 0.1U K 50V		4040873006	ELECT 22U M 50V
	4040912606	CERAMIC 0.1U K 50V	C201	4041159109	MT-POLYEST 0.22U J 63V
	4033670417	CERAMIC 0.1U K 50V		4040935407	MT-POLYEST 0.22U J 63V
C1204	4041047000	CERAMIC 0.056U K 50V		4032377901	MT-COMPO 0.22U J 50V
	4040914808	CERAMIC 0.056U K 50V	C202	4041044900	CERAMIC 0.1U K 50V
	4033082111	CERAMIC 0.056U K 16V		4040912606	CERAMIC 0.1U K 50V
	4033565218	CERAMIC 0.056U K 50V		4033670417	CERAMIC 0.1U K 50V
C1205	4041047000	CERAMIC 0.056U K 50V	C203	4040947004	CERAMIC 15P J 50V
	4040914808	CERAMIC 0.056U K 50V		4031554214	CERAMIC 15P J 50V
	4033082111	CERAMIC 0.056U K 16V	C204	4040970408	ELECT 47U M 35V
	4033565218	CERAMIC 0.056U K 50V		4040854609	ELECT 47U M 35V
C1206	4041045402	CERAMIC 1800P K 50V	C205	4040970101	ELECT 1U M 50V
	4040913009	CERAMIC 1800P K 50V		4040843801	ELECT 1U M 50V
	4031577015	CERAMIC 1800P K 50V	C206	4041044900	CERAMIC 0.1U K 50V
	4032355513	CERAMIC 1800P K 50V		4040912606	CERAMIC 0.1U K 50V
C1207	4040973409	ELECT 4.7U M 50V		4033670417	CERAMIC 0.1U K 50V
	4040844204	ELECT 4.7U M 50V	C207	4041045303	CERAMIC 0.015U K 50V
C1208	4041045402	CERAMIC 1800P K 50V		4040912903	CERAMIC 0.015U K 50V
	4040913009	CERAMIC 1800P K 50V		4032152419	CERAMIC 0.015U K 50V
	4031577015	CERAMIC 1800P K 50V	C208	4040984009	MT-POLYEST 0.1U J 63V
	4032355513	CERAMIC 1800P K 50V		4040852902	MT-POLYEST 0.1U J 63V
C1209	4041047000	CERAMIC 0.056U K 50V		4032378007	MT-COMPO 0.1U J 50V
	4040914808	CERAMIC 0.056U K 50V	C209	4041159109	MT-POLYEST 0.22U J 63V
	4033082111	CERAMIC 0.056U K 16V		4040935407	MT-POLYEST 0.22U J 63V
	4033565218	CERAMIC 0.056U K 50V		4032377901	MT-COMPO 0.22U J 50V
C1210	4040952602	CERAMIC 0.22U Z 16V	C211	4041044900	CERAMIC 0.1U K 50V
	4040913405	CERAMIC 0.22U K 50V		4040912606	CERAMIC 0.1U K 50V
	4032812412	CERAMIC 0.22U K 16V		4033670417	CERAMIC 0.1U K 50V
C1211	4041045303	CERAMIC 0.015U K 50V	C212	4041081301	ELECT 47U M 16V
	4040912903	CERAMIC 0.015U K 50V		4041174607	ELECT 47U M 25V
	4030709813	CERAMIC 0.015U K 50V		4041157204	ELECT 47U M 35V
	4032152419	CERAMIC 0.015U K 50V		4031904811	ELECT 47U M 25V
C1212	4040973409	ELECT 4.7U M 50V		4032118217	ELECT 47U M 35V
	4040844204	ELECT 4.7U M 50V	C213	4040972808	ELECT 0.47U M 50V
C1213	4041047000	CERAMIC 0.056U K 50V		4040843702	ELECT 0.47U M 50V
	4040914808	CERAMIC 0.056U K 50V	C214	4041045303	CERAMIC 0.015U K 50V
	4033082111	CERAMIC 0.056U K 16V		4040912903	CERAMIC 0.015U K 50V
	4033565218	CERAMIC 0.056U K 50V		4032152419	CERAMIC 0.015U K 50V
C1216	4040970200	ELECT 10U M 50V	C215	4040984009	MT-POLYEST 0.1U J 63V
	4040843900	ELECT 10U M 50V		4040852902	MT-POLYEST 0.1U J 63V
C1217	4040970101	ELECT 1U M 50V		4032378007	MT-COMPO 0.1U J 50V
	4040843801	ELECT 1U M 50V	C216	4041032907	CERAMIC 0.01U K 50V
C1218	4040970101	ELECT 1U M 50V		4040901204	CERAMIC 0.01U K 50V
	4040843801	ELECT 1U M 50V		4032152211	CERAMIC 0.01U K 50V
C1221	4033588316	CERAMIC 1U K 10V	C218	4041032907	CERAMIC 0.01U K 50V

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
	4040901204	CERAMIC 0.01U K 50V		4041089000	NP-ELECT 2.2U M 100V
	4032152211	CERAMIC 0.01U K 50V		4040849902	NP-ELECT 2.2U M 100V
C219	4040970408	ELECT 47U M 35V	C486	4041054701	ELECT 22U M 250V
	4040854609	ELECT 47U M 35V		4034553610	ELECT 22U M 250V
C220	4040970408	ELECT 47U M 35V		4034320806	ELECT 22U M 250V
	4040854609	ELECT 47U M 35V	C489	4041137107	MT-POLYEST 0.47U J 250V
C221	4041032907	CERAMIC 0.01U K 50V		4030666106	MT-POLYEST 0.47U J 250V
	4040901204	CERAMIC 0.01U K 50V		4034335008	MT-POLYEST 0.47U J 250V
	4032152211	CERAMIC 0.01U K 50V	C491	4041136803	CERAMIC 680P K 500V
C222	4040970200	ELECT 10U M 50V		4034164915	CERAMIC 680P K 500V
	4040843900	ELECT 10U M 50V	C511	4041151707	ELECT 10U M 50V
C223	4041151707	ELECT 10U M 50V		4032113519	ELECT 10U M 50V
	4032113519	ELECT 10U M 50V	C514	4041151707	ELECT 10U M 50V
C224	4040970200	ELECT 10U M 50V		4032113519	ELECT 10U M 50V
	4040843900	ELECT 10U M 50V	C515	4041064106	ELECT 1000U M 25V
C225	4040970200	ELECT 10U M 50V		4031904702	ELECT 1000U M 25V
	4040843900	ELECT 10U M 50V	C517	4041157303	ELECT 220U M 35V
C231	4041044900	CERAMIC 0.1U K 50V		4032114427	ELECT 220U M 35V
	4040912606	CERAMIC 0.1U K 50V	C518	4030575329	POLYESTER 1200P J 50V
	4033670417	CERAMIC 0.1U K 50V		4031793702	POLYESTER 1200P J 50V
C232	4040970101	ELECT 1U M 50V		4030704937	CERAMIC 1200P K 50V
	4040843801	ELECT 1U M 50V	C521	4041063505	ELECT 1000U M 35V
C233	4041044900	CERAMIC 0.1U K 50V		4032112532	ELECT 1000U M 35V
	4040912606	CERAMIC 0.1U K 50V	C524	4041155606	POLYESTER 0.068U J 100V
	4033670417	CERAMIC 0.1U K 50V		4033074017	POLYESTER 0.068U J 100V
C234	4041045709	CERAMIC 2200U K 50V		4031429522	POLYESTER 0.068U K 100V
	4040913306	CERAMIC 2200P K 50V		4032890826	POLYESTER 0.068U K 100V
	4031134119	CERAMIC 2200P K 50V	C525	4041040209	CERAMIC 100P J 50V
C235	4041044900	CERAMIC 0.1U K 50V		4040946403	CERAMIC 100P J 50V
	4040912606	CERAMIC 0.1U K 50V		4031573611	CERAMIC 100P J 50V
	4033670417	CERAMIC 0.1U K 50V	△ C601	4040881704	MT-POLYEST 0.22U K 250V
C239	4011506011	MT-GLAZE 0.000 ZA 1/10W		4040888802	MT-POLYEST 0.22U M 275V
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4040941804	MT-POLYEST 0.22U K 275V
C240	4011506011	MT-GLAZE 0.000 ZA 1/10W		4040966708	MT-POLYPRO 0.22U M 275V
	4011057919	MT-GLAZE 0.000 ZA 1/16W	△ C602	4040881704	MT-POLYEST 0.22U K 250V
C241	4011506011	MT-GLAZE 0.000 ZA 1/10W		4040888802	MT-POLYEST 0.22U M 275V
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4040941804	MT-POLYEST 0.22U K 275V
C242	4011506011	MT-GLAZE 0.000 ZA 1/10W		4040966708	MT-POLYPRO 0.22U M 275V
	4011057919	MT-GLAZE 0.000 ZA 1/16W	C603	4041157501	CERAMIC 1000P K 1K
C243	4011506011	MT-GLAZE 0.000 ZA 1/10W		4041078400	CERAMIC 1000P K 1K
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4041157105	CERAMIC 1000P K 1K
C246	4041032907	CERAMIC 0.01U K 50V		4040846307	CERAMIC 1000P K 1K
	4040901204	CERAMIC 0.01U K 50V		4030766707	CERAMIC 1000P K 1K
	4032152211	CERAMIC 0.01U K 50V		4032221313	CERAMIC 1000P K 1K
C432	4041135103	CERAMIC 3900P K 500V		4032719622	CERAMIC 1000P K 1K
	4032753329	CERAMIC 3900P K 500V	C604	4041157501	CERAMIC 1000P K 1K
C433	4041135103	CERAMIC 3900P K 500V		4041078400	CERAMIC 1000P K 1K
	4032753329	CERAMIC 3900P K 500V		4041157105	CERAMIC 1000P K 1K
C434	4041085705	ELECT 330U M 35V		4040846307	CERAMIC 1000P K 1K
	4041075201	ELECT 330U M 35V		4030766707	CERAMIC 1000P K 1K
C435	4040831709	MT-POLYPRO 6000P H 1.5K		4032221313	CERAMIC 1000P K 1K
	4041021505	MT-POLYPRO 6000P H 1.5V		4032719622	CERAMIC 1000P K 1K
	4041165001	MT-POLYPRO 6000P J 1.6K	C605	4041036905	CERAMIC 0.1U K 25V
	4033727319	MT-POLYPRO 6000P H 1.5K		4040950806	CERAMIC 0.1U K 25V
C436	4041124206	CERAMIC 270P K 3K		4033423310	CERAMIC 0.1U K 25V
	4041165209	CERAMIC 270P K 2K		4031640214	CERAMIC 0.1U Z 25V
	4041165100	CERAMIC 270P K 2K		4033670417	CERAMIC 0.1U K 50V
	4032690416	CERAMIC 270P K 3K		4033053517	CERAMIC 0.1U Z 50V
C438	4041124206	CERAMIC 270P K 3K	C607	4041048304	ELECT 220U M 400V
	4041165209	CERAMIC 270P K 2K		4041107100	ELECT 150U M 400V
	4041165100	CERAMIC 270P K 2K	C610	4040904601	POLYESTER 2200P K 63V
	4032690416	CERAMIC 270P K 3K		4041154203	POLYESTER 2200P J 100
C441	4040850205	MT-POLYPRO 0.27U J 250V		4031792705	POLYESTER 2200P J 50V
	4033467126	MT-POLYPRO 0.27U J 250V		4031792606	POLYESTER 2200P K 50V
	4033794311	MT-POLYPRO 0.27U J 250V		4032770019	POLYESTER 2200P K 100V
	4033726817	MT-POLYPRO 0.27U J 250V	C611	4041155200	ELECT 1U M 50V
C471	4040565307	NP-ELECT 2.2U M 100V		4032112116	ELECT 1U M 50V



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C612	4030572130	POLYESTER 0.1U J 50V		4040901204	CERAMIC 0.01U K 50V
	4031818306	POLYESTER 0.1U J 50V		4032152211	CERAMIC 0.01U K 50V
	4030573107	POLYESTER 0.1U K 50V	C803	4041032402	CERAMIC 1000P K 50V
	4031818207	POLYESTER 0.1U K 50V		4040901105	CERAMIC 1000P K 50V
C613	4041155507	POLYESTER 6800P J 100V		4031133815	CERAMIC 1000P K 50V
	4031790404	POLYESTER 6800P J 50V	C804	4041032907	CERAMIC 0.01U K 50V
	4031790305	POLYESTER 6800P K 50V		4040901204	CERAMIC 0.01U K 50V
C614	4040869900	POLYPRO 0.022U J 630V		4032152211	CERAMIC 0.01U K 50V
	4030840318	POLYPRO 0.022U J 630V	C805	4040970408	ELECT 47U M 35V
C615	4041162406	ELECT 33U M 35V		4040854609	ELECT 47U M 35V
	4032116015	ELECT 33U M 35V	C806	4040970408	ELECT 47U M 35V
C616	4041119707	CERAMIC 470P K 2K		4040854609	ELECT 47U M 35V
	4041126804	CERAMIC 470P K 2K	C807	4041032907	CERAMIC 0.01U K 50V
	4041112500	CERAMIC 470P K 2K		4040901204	CERAMIC 0.01U K 50V
	4040862109	CERAMIC 470P K 2K		4032152211	CERAMIC 0.01U K 50V
C617	4041093700	CERAMIC 390P K 3K	C808	4041032907	CERAMIC 0.01U K 50V
	4040862406	CERAMIC 390P K 3K		4040901204	CERAMIC 0.01U K 50V
	4040850809	CERAMIC 390P K 3K		4032152211	CERAMIC 0.01U K 50V
	4033242505	CERAMIC 390P K 3K	C809	4040970408	ELECT 47U M 35V
	4032758423	CERAMIC 390P K 3K		4040854609	ELECT 47U M 35V
△C627	4040733904	CERAMIC 1000P K 250V	C810	4040947608	CERAMIC 22P J 50V
	4040732105	CERAMIC 1000P M 250V		4031459915	CERAMIC 22P J 50V
	4040713302	CERAMIC 1000P M 400V	C811	4041032907	CERAMIC 0.01U K 50V
	4041113903	CERAMIC 1000P M 400V		4040901204	CERAMIC 0.01U K 50V
	4041039104	CERAMIC 1000P M 400V		4032152211	CERAMIC 0.01U K 50V
△C628	4040733904	CERAMIC 1000P K 250V	C812	4041156801	ELECT 470U M 10V
	4040732105	CERAMIC 1000P M 250V		4032118514	ELECT 470U M 10V
	4040713302	CERAMIC 1000P M 400V	C813	4040947608	CERAMIC 22P J 50V
	4041113903	CERAMIC 1000P M 400V		4031459915	CERAMIC 22P J 50V
	4041039104	CERAMIC 1000P M 400V	C814	4041032907	CERAMIC 0.01U K 50V
△C629	4040733904	CERAMIC 1000P K 250V		4040901204	CERAMIC 0.01U K 50V
	4040732105	CERAMIC 1000P M 250V		4032152211	CERAMIC 0.01U K 50V
	4040713302	CERAMIC 1000P M 400V	C815	4040970408	ELECT 47U M 35V
	4041113903	CERAMIC 1000P M 400V		4040854609	ELECT 47U M 35V
	4041039104	CERAMIC 1000P M 400V	C816	4041032907	CERAMIC 0.01U K 50V
C631	4041157501	CERAMIC 1000P K 1K		4040901204	CERAMIC 0.01U K 50V
	4041078400	CERAMIC 1000P K 1K		4032152211	CERAMIC 0.01U K 50V
	4041157105	CERAMIC 1000P K 1K	C817	4040970408	ELECT 47U M 35V
	4040846307	CERAMIC 1000P K 1K		4040854609	ELECT 47U M 35V
	4030766707	CERAMIC 1000P K 1K	C818	4040970408	ELECT 47U M 35V
	4032221313	CERAMIC 1000P K 1K		4040854609	ELECT 47U M 35V
	4032719622	CERAMIC 1000P K 1K	C819	4041032907	CERAMIC 0.01U K 50V
C632	4041078202	CERAMIC 470P K 1K		4040901204	CERAMIC 0.01U K 50V
	4040861508	CERAMIC 470P K 1K		4032152211	CERAMIC 0.01U K 50V
	4032475003	CERAMIC 470P K 1K	C820	4040947608	CERAMIC 22P J 50V
C633	4041078202	CERAMIC 470P K 1K		4031459915	CERAMIC 22P J 50V
	4040861508	CERAMIC 470P K 1K	C821	4040947608	CERAMIC 22P J 50V
	4032475003	CERAMIC 470P K 1K		4031459915	CERAMIC 22P J 50V
C634	4041078202	CERAMIC 470P K 1K			
	4040861508	CERAMIC 470P K 1K	<b>RESISTOR</b>		
	4032475003	CERAMIC 470P K 1K	R001	4012561712	MT-GLAZE 33K JA 1/10W
C637	4041139804	CERAMIC 150P K 50V		4011054215	MT-GLAZE 33K JA 1/16W
	4031037529	CERAMIC 150P K 50V	R002	4012561712	MT-GLAZE 33K JA 1/10W
C641	4040739005	ELECT 220U M 160V		4011054215	MT-GLAZE 33K JA 1/16W
	4040973706	ELECT 220U M 160V	R003	4011623114	MT-GLAZE 3.3K JA 1/10W
C643	4041080809	ELECT 470U M 35V		4011054116	MT-GLAZE 3.3K JA 1/16W
	4032119620	ELECT 470U M 35V	R004	4011623114	MT-GLAZE 3.3K JA 1/10W
C644	4041064106	ELECT 1000U M 25V		4011054116	MT-GLAZE 3.3K JA 1/16W
	4031904702	ELECT 1000U M 25V	R005	4010258208	CARBON 22K JA 1/6W
C645	4041063604	ELECT 2200U M 25V		4021025301	CARBON 22K JA 1/6W
	4032115127	ELECT 2200U M 25V		4020941701	CARBON 22K JA 1/6W
C662	4041081509	ELECT 100U M 25V	R007	4011506219	MT-GLAZE 1K JA 1/10W
	4031905214	ELECT 100U M 25V		4011050514	MT-GLAZE 1K JA 1/16W
C801	4041032907	CERAMIC 0.01U K 50V	R008	4011506011	MT-GLAZE 0.000 ZA 1/10W
	4040901204	CERAMIC 0.01U K 50V		4011057919	MT-GLAZE 0.000 ZA 1/16W
	4032152211	CERAMIC 0.01U K 50V	R009	4012567615	MT-GLAZE 3.9K JA 1/10W
C802	4041032907	CERAMIC 0.01U K 50V		4011054611	MT-GLAZE 3.9K JA 1/16W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1001	4012562719	MT-GLAZE 75 JA 1/10W		4011050415	MT-GLAZE 100 JA 1/16W
	4011134412	MT-GLAZE 75 JA 1/16W	R107	4012556510	MT-GLAZE 100 JA 1/10W
R1002	4011506219	MT-GLAZE 1K JA 1/10W		4011050415	MT-GLAZE 100 JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R109	4011623015	MT-GLAZE 22K JA 1/10W
R1003	4012567219	MT-GLAZE 18K JA 1/10W		4011052914	MT-GLAZE 22K JA 1/16W
	4011052112	MT-GLAZE 18K JA 1/16W	R111	4011622414	MT-GLAZE 1.2K JA 1/10W
R1004	4011506219	MT-GLAZE 1K JA 1/10W		4011051016	MT-GLAZE 1.2K JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R112	4011624111	MT-GLAZE 5.6K JA 1/10W
R1005	4012567219	MT-GLAZE 18K JA 1/10W		4011056011	MT-GLAZE 5.6K JA 1/16W
	4011052112	MT-GLAZE 18K JA 1/16W	R114	4011523216	MT-GLAZE 330 JA 1/10W
R1006	4012566915	MT-GLAZE 680 JA 1/10W		4011054017	MT-GLAZE 330 JA 1/16W
	4011056516	MT-GLAZE 680 JA 1/16W	R115	4010272105	CARBON 56 JA 1/6W
R1007	4011505816	MT-GLAZE 100K JA 1/10W		4021037205	CARBON 56 JA 1/6W
	4011050712	MT-GLAZE 100K JA 1/16W		4020943804	CARBON 56 JA 1/6W
R1008	4012566915	MT-GLAZE 680 JA 1/10W	R116	4012564119	MT-GLAZE 56 JA 1/10W
	4011056516	MT-GLAZE 680 JA 1/16W		4011055816	MT-GLAZE 56 JA 1/16W
R1009	4011505816	MT-GLAZE 100K JA 1/10W	R1201	4011505915	MT-GLAZE 10K JA 1/10W
	4011050712	MT-GLAZE 100K JA 1/16W		4011050613	MT-GLAZE 10K JA 1/16W
R101	4011506011	MT-GLAZE 0.000 ZA 1/10W	R1202	4011523216	MT-GLAZE 330 JA 1/10W
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4011054017	MT-GLAZE 330 JA 1/16W
R1010	4012562719	MT-GLAZE 75 JA 1/10W	R121	4010264308	CARBON 3.3K JA 1/6W
	4011134412	MT-GLAZE 75 JA 1/16W		4021086104	CARBON 3.3K JA 1/6W
R1011	4011505816	MT-GLAZE 100K JA 1/10W		4020942708	CARBON 3.3K JA 1/6W
	4011050712	MT-GLAZE 100K JA 1/16W	R1212	4011523216	MT-GLAZE 330 JA 1/10W
R1012	4011506219	MT-GLAZE 1K JA 1/10W		4011054017	MT-GLAZE 330 JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R1213	4011505915	MT-GLAZE 10K JA 1/10W
R1013	4012567219	MT-GLAZE 18K JA 1/10W		4011050613	MT-GLAZE 10K JA 1/16W
	4011052112	MT-GLAZE 18K JA 1/16W	R1216	4012556510	MT-GLAZE 100 JA 1/10W
R1014	4011506219	MT-GLAZE 1K JA 1/10W		4011050415	MT-GLAZE 100 JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R1217	4012556510	MT-GLAZE 100 JA 1/10W
R1015	4012567219	MT-GLAZE 18K JA 1/10W		4011050415	MT-GLAZE 100 JA 1/16W
	4011052112	MT-GLAZE 18K JA 1/16W	R1218	4011505915	MT-GLAZE 10K JA 1/10W
R1016	4012562719	MT-GLAZE 75 JA 1/10W		4011050613	MT-GLAZE 10K JA 1/16W
	4011134412	MT-GLAZE 75 JA 1/16W	R1219	4012566311	MT-GLAZE 47K JA 1/10W
R1018	4012562719	MT-GLAZE 75 JA 1/10W		4011055410	MT-GLAZE 47K JA 1/16W
	4011134412	MT-GLAZE 75 JA 1/16W	R122	4011506219	MT-GLAZE 1K JA 1/10W
R102	4011623718	MT-GLAZE 4.7K JA 1/10W		4011050514	MT-GLAZE 1K JA 1/16W
	4011055311	MT-GLAZE 4.7K JA 1/16W	R1220	4012566311	MT-GLAZE 47K JA 1/10W
R1020	4012562719	MT-GLAZE 75 JA 1/10W		4011055410	MT-GLAZE 47K JA 1/16W
	4011134412	MT-GLAZE 75 JA 1/16W	R1221	4011506011	MT-GLAZE 0.000 ZA 1/10W
R1021	4012562719	MT-GLAZE 75 JA 1/10W		4011057919	MT-GLAZE 0.000 ZA 1/16W
	4011134412	MT-GLAZE 75 JA 1/16W	R1222	4011506011	MT-GLAZE 0.000 ZA 1/10W
R1025	4011622919	MT-GLAZE 220 JA 1/10W		4011057919	MT-GLAZE 0.000 ZA 1/16W
	4011052716	MT-GLAZE 220 JA 1/16W	R126	4012558712	MT-GLAZE 22 JA 1/10W
R1026	4011506219	MT-GLAZE 1K JA 1/10W		4011052617	MT-GLAZE 22 JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R1902	4012560418	MT-GLAZE 12K JA 1/10W
R1027	4011506219	MT-GLAZE 1K JA 1/10W		4011051115	MT-GLAZE 12K JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R1903	4011624111	MT-GLAZE 5.6K JA 1/10W
R1028	4011506219	MT-GLAZE 1K JA 1/10W		4011056011	MT-GLAZE 5.6K JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R1904	4012567615	MT-GLAZE 3.9K JA 1/10W
R1029	4011506219	MT-GLAZE 1K JA 1/10W		4011054611	MT-GLAZE 3.9K JA 1/16W
	4011050514	MT-GLAZE 1K JA 1/16W	R1905	4011506110	MT-GLAZE 2.2K JA 1/10W
R103	4010618002	OXIDE-MT 39K JA 1W		4011052815	MT-GLAZE 2.2K JA 1/16W
R1030	4012558712	MT-GLAZE 22 JA 1/10W	R1906	4011622810	MT-GLAZE 1.8K JA 1/10W
	4011052617	MT-GLAZE 22 JA 1/16W		4011052013	MT-GLAZE 1.8K JA 1/16W
R1031	4010272105	CARBON 56 JA 1/6W	R1907	4012556510	MT-GLAZE 100 JA 1/10W
	4021037205	CARBON 56 JA 1/6W		4011050415	MT-GLAZE 100 JA 1/16W
	4020943804	CARBON 56 JA 1/6W	R1911	4011523216	MT-GLAZE 330 JA 1/10W
R1032	4012566311	MT-GLAZE 47K JA 1/10W		4011054017	MT-GLAZE 330 JA 1/16W
	4011055410	MT-GLAZE 47K JA 1/16W	R1912	4011622919	MT-GLAZE 220 JA 1/10W
R1033	4012566311	MT-GLAZE 47K JA 1/10W		4011052716	MT-GLAZE 220 JA 1/16W
	4011055410	MT-GLAZE 47K JA 1/16W	R1913	4011523216	MT-GLAZE 330 JA 1/10W
R1034	4012566311	MT-GLAZE 47K JA 1/10W		4011054017	MT-GLAZE 330 JA 1/16W
	4011055410	MT-GLAZE 47K JA 1/16W	R1916	4011623015	MT-GLAZE 22K JA 1/10W
R1035	4012566311	MT-GLAZE 47K JA 1/10W		4011052914	MT-GLAZE 22K JA 1/16W
	4011055410	MT-GLAZE 47K JA 1/16W	R201	4010727417	OXIDE-MT 47 JA 3W
R106	4012556510	MT-GLAZE 100 JA 1/10W	R202	4010736419	OXIDE-MT 82 JA 3W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R205	4010247707	CARBON 100K JA 1/6W		4010214105	CARBON 56K JA 1/4W
	4021030206	CARBON 100K JA 1/6W		4021119307	CARBON 56K JA 1/4W
	4020939708	CARBON 100K JA 1/6W		4020938602	CARBON 56K JA 1/4W
R206	4011506011	MT-GLAZE 0.000 ZA 1/10W	R423	4010224104	CARBON 68K JA 1/4W
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4021025806	CARBON 68K JA 1/4W
R207	4011506011	MT-GLAZE 0.000 ZA 1/10W		4020938800	CARBON 68K JA 1/4W
	4011057919	MT-GLAZE 0.000 ZA 1/16W	R424	4010247004	CARBON 1K JA 1/6W
R208	4012566311	MT-GLAZE 47K JA 1/10W		4021027503	CARBON 1K JA 1/6W
	4011055410	MT-GLAZE 47K JA 1/16W		4020939500	CARBON 1K JA 1/6W
R210	4010682409	OXIDE-MT 47 JA 2W	R426	4010247400	CARBON 10K JA 1/6W
R211	4012561712	MT-GLAZE 33K JA 1/10W		4021031500	CARBON 10K JA 1/6W
	4011054215	MT-GLAZE 33K JA 1/16W		4020939609	CARBON 10K JA 1/6W
R212	4011623114	MT-GLAZE 3.3K JA 1/10W	R433	4010071104	CARBON 1K JA 1/2W
	4011054116	MT-GLAZE 3.3K JA 1/16W		4021039100	CARBON 1K JA 1/2W
R215	4011505915	MT-GLAZE 10K JA 1/10W		4020922601	CARBON 1K JA 1/2W
	4011050613	MT-GLAZE 10K JA 1/16W	R434	4010660308	OXIDE-MT 180 JA 2W
R216	4011505915	MT-GLAZE 10K JA 1/10W	R435	4020873200	WIRE WOUND 3.3 KA 5W
	4011050613	MT-GLAZE 10K JA 1/16W		4020977908	WIRE WOUND 3.3 KA 5W
R217	4012560210	MT-GLAZE 120K JA 1/10W		4020925701	WIRE WOUND 3.3 KA 5W
	4011051214	MT-GLAZE 120K JA 1/16W	R441	4010684601	OXIDE-MT 4.7K JA 2W
R218	4012556510	MT-GLAZE 100 JA 1/10W	R445	4010697106	OXIDE-MT 820 JA 2W
	4011050415	MT-GLAZE 100 JA 1/16W	R471	4012566618	MT-GLAZE 68K JA 1/10W
R219	4011623718	MT-GLAZE 4.7K JA 1/10W		4011058213	MT-GLAZE 68K JA 1/16W
	4011055311	MT-GLAZE 4.7K JA 1/16W	R472	4012560111	MT-GLAZE 8.2K JA 1/10W
R220	4012560111	MT-GLAZE 8.2K JA 1/10W		4011057414	MT-GLAZE 8.2K JA 1/16W
	4011057414	MT-GLAZE 8.2K JA 1/16W	R473	4010258634	CARBON 220K GA 1/6W
R221	4012567615	MT-GLAZE 3.9K JA 1/10W		4010258703	CARBON 220K JA 1/6W
	4011054611	MT-GLAZE 3.9K JA 1/16W		4021170209	CARBON 220K JA 1/6W
R222	4012559719	MT-GLAZE 82K JA 1/10W		4021170100	CARBON 220K JA 1/6W
	4011057513	MT-GLAZE 82K JA 1/16W	R474	4011505915	MT-GLAZE 10K JA 1/10W
R223	4010582303	OXIDE-MT 100 JA 1W		4011050613	MT-GLAZE 10K JA 1/16W
R224	4011505915	MT-GLAZE 10K JA 1/10W	R481	4010663507	OXIDE-MT 2.7 JA 2W
	4011050613	MT-GLAZE 10K JA 1/16W	R485	4010380919	MT-GLAZE 220K JA 1/10W
R227	4011622711	MT-GLAZE 180 JA 1/10W	R486	4010380919	MT-GLAZE 220K JA 1/10W
	4011051917	MT-GLAZE 180 JA 1/16W	R488	4010067602	CARBON 1 JA 1/2W
R228	4011622711	MT-GLAZE 180 JA 1/10W		4021042100	CARBON 1 JA 1/2W
	4011051917	MT-GLAZE 180 JA 1/16W	R501	4010670802	OXIDE-MT 2.7K JA 2W
R229	4011622711	MT-GLAZE 180 JA 1/10W	R502	4012565314	MT-GLAZE 56K JA 1/10W
	4011051917	MT-GLAZE 180 JA 1/16W		4011058114	MT-GLAZE 56K JA 1/16W
R231	4011506110	MT-GLAZE 2.2K JA 1/10W	R514	4010267002	CARBON 3.9K JA 1/6W
	4011052815	MT-GLAZE 2.2K JA 1/16W		4021085800	CARBON 3.9K JA 1/6W
R232	4011506110	MT-GLAZE 2.2K JA 1/10W		4020943101	CARBON 3.9K JA 1/6W
	4011052815	MT-GLAZE 2.2K JA 1/16W	R515	4010275413	CARBON 6.8K GA 1/6W
R233	4011506110	MT-GLAZE 2.2K JA 1/10W		4010275502	CARBON 6.8K JA 1/6W
	4011052815	MT-GLAZE 2.2K JA 1/16W		4021030008	CARBON 6.8K JA 1/6W
R234	4011506011	MT-GLAZE 0.000 ZA 1/10W		4020944603	CARBON 6.8K JA 1/6W
	4011057919	MT-GLAZE 0.000 ZA 1/16W	R516	4010247331	CARBON 10K GA 1/6W
R235	4011506011	MT-GLAZE 0.000 ZA 1/10W		4010247400	CARBON 10K JA 1/6W
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4021031500	CARBON 10K JA 1/6W
R236	4011623015	MT-GLAZE 22K JA 1/10W		4020939609	CARBON 10K JA 1/6W
	4011052914	MT-GLAZE 22K JA 1/16W	R518	4010644407	OXIDE-MT 1.2 JA 2W
R238	4011506011	MT-GLAZE 0.000 ZA 1/10W	R522	4010257409	CARBON 220 JA 1/6W
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4021025608	CARBON 220 JA 1/6W
R239	4011506011	MT-GLAZE 0.000 ZA 1/10W		4020941503	CARBON 220 JA 1/6W
	4011057919	MT-GLAZE 0.000 ZA 1/16W	R523	4010200752	CARBON 470 JA 1/4W
R246	4011506011	MT-GLAZE 0.000 ZA 1/10W		4010200801	CARBON 470 JA 1/4W
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4021027404	CARBON 470 JA 1/4W
R248	4011506011	MT-GLAZE 0.000 ZA 1/10W		4020938206	CARBON 470 JA 1/4W
	4011057919	MT-GLAZE 0.000 ZA 1/16W		4020842107	CARBON 470 JA 1/4W
R355	4010126953	CARBON 10K JA 1/4W	R525	4010656509	OXIDE-MT 150 JA 2W
	4010127009	CARBON 10K JA 1/4W	△R601	4010088607	CARBON 220K JA 1/2W
	4021027701	CARBON 10K JA 1/4W		4021025103	CARBON 220K JA 1/2W
	4020935700	CARBON 10K JA 1/4W		4020924100	CARBON 220K JA 1/2W
R421	4011506219	MT-GLAZE 1K JA 1/10W	△R602	4020826909	WIRE WOUND 1.8 KA 5W
	4011050514	MT-GLAZE 1K JA 1/16W		4020998309	WIRE WOUND 1.8 KA 5W
R422	4010213712	CARBON 56K GA 1/4W	R603	4010643103	OXIDE-MT 0.68 JA 2W
	4010214036	CARBON 56K JA 1/4W	R604	4010645206	OXIDE-MT 1.5 JA 2W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R605	4010246938	CARBON 1K GA 1/6W		4021027503	CARBON 1K JA 1/6W
	4010247004	CARBON 1K JA 1/6W		4020939500	CARBON 1K JA 1/6W
	4021027503	CARBON 1K JA 1/6W	R806	4011505915	MT-GLAZE 10K JA 1/10W
	4020939500	CARBON 1K JA 1/6W		4011050613	MT-GLAZE 10K JA 1/16W
R606	4010632800	OXIDE-MT 68K JA 1W	R809	4010269600	CARBON 470 JA 1/6W
R607	4010260409	CARBON 27 JA 1/6W		4021027909	CARBON 470 JA 1/6W
R609	4010246700	CARBON 100 JA 1/6W		4020943507	CARBON 470 JA 1/6W
	4021032101	CARBON 100 JA 1/6W	R813	4010246700	CARBON 100 JA 1/6W
	4020939401	CARBON 100 JA 1/6W		4021032101	CARBON 100 JA 1/6W
R610	4010247004	CARBON 1K JA 1/6W		4020939401	CARBON 100 JA 1/6W
	4021027503	CARBON 1K JA 1/6W	R814	4010246700	CARBON 100 JA 1/6W
	4020939500	CARBON 1K JA 1/6W		4021032101	CARBON 100 JA 1/6W
R611	4010249305	CARBON 1.2K JA 1/6W		4020939401	CARBON 100 JA 1/6W
	4021121003	CARBON 1.2K JA 1/6W	R815	4012567318	MT-GLAZE 6.8K JA 1/10W
	4020940001	CARBON 1.2K JA 1/6W		4011056615	MT-GLAZE 6.8K JA 1/16W
R613	4010088607	CARBON 220K JA 1/2W	R816	4012567318	MT-GLAZE 6.8K JA 1/10W
	4021025103	CARBON 220K JA 1/2W		4011056615	MT-GLAZE 6.8K JA 1/16W
	4020924100	CARBON 220K JA 1/2W	R817	4010246700	CARBON 100 JA 1/6W
R614	4010082605	CARBON 180K JA 1/2W		4021032101	CARBON 100 JA 1/6W
	4021114500	CARBON 180K JA 1/2W		4020939401	CARBON 100 JA 1/6W
	4021109803	CARBON 180K JA 1/2W	R818	4010246700	CARBON 100 JA 1/6W
△R631	4020008305	SOLID 5.6M KA 1/2W		4021032101	CARBON 100 JA 1/6W
	4021103801	SOLID 5.6M KA 1/2W		4020939401	CARBON 100 JA 1/6W
	4020975706	CARBON 5.6M KA 1/2W	R820	4010257102	CARBON 22 JA 1/6W
△R632	4020008305	SOLID 5.6M KA 1/2W		4020941404	CARBON 22 JA 1/6W
	4021103801	SOLID 5.6M KA 1/2W	R822	4012558712	MT-GLAZE 22 JA 1/10W
	4020975706	CARBON 5.6M KA 1/2W		4011052617	MT-GLAZE 22 JA 1/16W
R635	4010075805	CARBON 120K JA 1/2W	R823	4012556510	MT-GLAZE 100 JA 1/10W
	4021086807	CARBON 120K JA 1/2W		4011050415	MT-GLAZE 100 JA 1/16W
	4020923103	CARBON 120K JA 1/2W	R824	4012556510	MT-GLAZE 100 JA 1/10W
R636	4011624111	MT-GLAZE 5.6K JA 1/10W		4011050415	MT-GLAZE 100 JA 1/16W
	4011056011	MT-GLAZE 5.6K JA 1/16W	R825	4011623015	MT-GLAZE 22K JA 1/10W
R639	4010269808	CARBON 4.7K GA 1/6W		4011052914	MT-GLAZE 22K JA 1/16W
	4010269907	CARBON 4.7K JA 1/6W	R827	4011506219	MT-GLAZE 1K JA 1/10W
	4021031708	CARBON 4.7K JA 1/6W		4011050514	MT-GLAZE 1K JA 1/16W
	4020943606	CARBON 4.7K JA 1/6W	R828	4011506219	MT-GLAZE 1K JA 1/10W
	4020849304	CARBON 4.7K JA 1/6W		4011050514	MT-GLAZE 1K JA 1/16W
R642	4011505816	MT-GLAZE 100K JA 1/10W	R829	4010103102	CARBON 470 JA 1/2W
	4011050712	MT-GLAZE 100K JA 1/16W		4021083301	CARBON 470 JA 1/2W
R643	4010651702	OXIDE-MT 12 JA 2W		4020925206	CARBON 470 JA 1/2W
R644	4010703015	OXIDE-MT 1 JA 3W		4020862402	CARBON 470 JA 1/2W
R645	4010251902	CARBON 15K JA 1/6W	R831	4010588008	OXIDE-MT 120 JA 1W
	4021040007	CARBON 15K JA 1/6W	R832-TM	4010103102	CARBON 470 JA 1/2W
	4020940605	CARBON 15K JA 1/6W	R833-TM	4011050712	MT-GLAZE 100K JA 1/16W
R668	4010643707	OXIDE-MT 1 JA 2W	R834	4011505915	MT-GLAZE 10K JA 1/10W
R685	4010146050	CARBON 150K JA 1/4W		4011050613	MT-GLAZE 10K JA 1/16W
	4010146109	CARBON 150K JA 1/4W	R835	4011505915	MT-GLAZE 10K JA 1/10W
	4021117402	CARBON 150K JA 1/4		4011050613	MT-GLAZE 10K JA 1/16W
	4021109605	CARBON 150K JA 1/4W	R838	4012556510	MT-GLAZE 100 JA 1/10W
R686	4010126953	CARBON 10K JA 1/4W		4011050415	MT-GLAZE 100 JA 1/16W
	4010127009	CARBON 10K JA 1/4W	R839	4012556510	MT-GLAZE 100 JA 1/10W
	4021027701	CARBON 10K JA 1/4W		4011050415	MT-GLAZE 100 JA 1/16W
	4020935700	CARBON 10K JA 1/4W	R840	4012558712	MT-GLAZE 22 JA 1/10W
R687	4010191852	CARBON 3.9K JA 1/4W		4011052617	MT-GLAZE 22 JA 1/16W
	4010191901	CARBON 3.9K JA 1/4W	R842	4012556510	MT-GLAZE 100 JA 1/10W
	4021085800	CARBON 3.9K JA 1/6W		4011050415	MT-GLAZE 100 JA 1/16W
	4020943101	CARBON 3.9K JA 1/6W	R843	4011505915	MT-GLAZE 10K JA 1/10W
R688	4011623015	MT-GLAZE 22K JA 1/10W		4011050613	MT-GLAZE 10K JA 1/16W
	4011052914	MT-GLAZE 22K JA 1/16W	R886	4011623015	MT-GLAZE 22K JA 1/10W
R690	4010267002	CARBON 3.9K JA 1/6W		4011052914	MT-GLAZE 22K JA 1/16W
	4021085800	CARBON 3.9K JA 1/6W	R889	4012566618	MT-GLAZE 68K JA 1/10W
	4020943101	CARBON 3.9K JA 1/6W		4011058213	MT-GLAZE 68K JA 1/16W
R801	4011505915	MT-GLAZE 10K JA 1/10W	R890-TM	4010258703	CARBON 220K JA 1/6W
	4011050613	MT-GLAZE 10K JA 1/16W		4021170209	CARBON 220K JA 1/6W
R802	4011506110	MT-GLAZE 2.2K JA 1/10W		4021170100	CARBON 220K JA 1/6W
	4011052815	MT-GLAZE 2.2K JA 1/16W			
R805	4010247004	CARBON 1K JA 1/6W			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<b>VARIABLE RESISTOR</b>			D1903	4072128818	DIODE KDS160-RTK
VR631	6450065514	VR,SEMI,2.2K N		4080627201	DIODE 1SS35
	6450035579	VR,SEMI,2.2K N		4071490817	DIODE 1SS355-TE-17
	6450952586	VR,SEMI,2.2K N	D1904	4072128818	DIODE KDS160-RTK
<b>TRANSFORMER</b>				4080627201	DIODE 1SS35
T431	6450833847	TRANS,DRIVE		4071490817	DIODE 1SS355-TE-17
	6520011144	TRANS,DRIVE	D1905	4072128818	DIODE KDS160-RTK
△T471	6520018303	TRANS,FLYBACK		4080627201	DIODE 1SS35
△T611A	6450938207	TRANS,POWER,PULSE		4071490817	DIODE 1SS355-TE-17
<b>COIL</b>			D1910	4080512408	LED 204HD
L1901	6450062490	INDUCTOR,1U K		4080626907	LED BT-202YX-31
L431	6520010468	CORE,PIPE	D1910A	6103039954	HOLDER LED-C4LA
L432	6520010468	CORE,PIPE		6103357706	HOLDER LED-BD6A
L441	6520010581	COIL,LINEARITY	D201	4070638606	ZENER DIODE MTZJ5.1A
△L601	6520001961	LINE FILTER		4080476403	ZENER DIODE MTZJ5.1A
L602	6100785953	PIPE CORE	D202	4080082406	DIODE 1N4148
	6520010130	CORE,PIPE		4080585600	DIODE 1SS133ST
L632	6100785953	PIPE CORE		4070124406	DIODE 1SS133
	6520010130	CORE,PIPE		4070134306	DIODE 1S2076A
L633	6100785953	PIPE CORE	D203	4072217116	ZENER DIODE UDZS-TE-1712B
	6520010130	CORE,PIPE	D204	4072217116	ZENER DIODE UDZS-TE-1712B
L634	6100785953	PIPE CORE	D205	4072217116	ZENER DIODE UDZS-TE-1712B
	6520010130	CORE,PIPE	D421	4070997228	ZENER DIODE MTZJ16A
L634	6100785953	PIPE CORE		4070547027	ZENER DIODE RD16EB1
L634	6520010130	CORE,PIPE		4070547215	ZENER DIODE RD16EB3
L635	6100785953	PIPE CORE		4080475307	ZENER DIODE MTZJ16A-52
	6520010130	CORE,PIPE	D445	6101975711	CUTTING WIRE
L801	6450082894	INDUCTOR,5.6U K	D485	4070077405	DIODE EU1
L803	6450257797	INDUCTOR,120 OHM		4080457709	DIODE EU1
	6520016996	INDUCTOR,120 OHM		4080584207	DIODE EU1
L804	6450257797	INDUCTOR,120 OHM	D507	4071182207	ZENER DIODE 1Z75
	6520016996	INDUCTOR,120 OHM	D508	4072128818	DIODE KDS160-RTK
<b>DIODE</b>				4080627201	DIODE 1SS35
DK201-TM	4070638606	ZENER DIODE MTZJ5.1A		4071490817	DIODE 1SS355-TE-17
	4080476403	ZENER DIODE MTZJ5.1A	D509	4072128818	DIODE KDS160-RTK
D001	4080082406	DIODE 1N4148		4080627201	DIODE 1SS35
	4080585600	DIODE 1SS133ST		4071490817	DIODE 1SS355-TE-17
	4070124406	DIODE 1SS133	D512	4070058602	DIODE ERA15-02-V1
	4070134306	DIODE 1S2076A		4080456801	DIODE ERA15-02
D005	4080082406	DIODE 1N4148		4080583101	DIODE ERA15-02
	4080585600	DIODE 1SS133ST	D603	4070066300	DIODE ERC05-10BV1
	4070124406	DIODE 1SS133		4070096901	DIODE RM11C
	4070134306	DIODE 1S2076A		4080457501	DIODE ERC05-10B
D1001	4072505817	ZENER DIODE KDZ10V		4080583309	DIODE RM11C
	4072065618	ZENER DIODE UDZS-TE-1710B	D604	4070066300	DIODE ERC05-10BV1
D102	4070995600	ZENER DIODE MTZJ6.8A		4070096901	DIODE RM11C
	4070574003	ZENER DIODE RD6.8EB1		4080457501	DIODE ERC05-10B
	4080478506	ZENER DIODE MTZJ6.8A	D605	4070066300	DIODE ERC05-10BV1
D103	4071000224	ZENER DIODE MTZJ36A		4070096901	DIODE RM11C
	4070562307	ZENER DIODE RD36EB1		4080457501	DIODE ERC05-10B
	4080476106	ZENER DIODE MTZJ36A		4080583309	DIODE RM11C
D105	4070638220	ZENER DIODE MTZJ10A	D606	4070066300	DIODE ERC05-10BV1
	4070996122	ZENER DIODE MTZJ10B		4070096901	DIODE RM11C
	4080472009	ZENER DIODE MTZJ10A		4080457501	DIODE ERC05-10B
	4080472207	ZENER DIODE MTZJ10B-52		4080583309	DIODE RM11C
D106	4070638220	ZENER DIODE MTZJ10A	D609	4080082406	DIODE 1N4148
	4070996122	ZENER DIODE MTZJ10B		4080585600	DIODE 1SS133ST
	4080472009	ZENER DIODE MTZJ10A		4070124406	DIODE 1SS133
	4080472207	ZENER DIODE MTZJ10B-52		4070134306	DIODE 1S2076A
D1201	4070058602	DIODE ERA15-02-V1	△D610	4072348701	PHOTO COUPLE PC123X5YFZ
	4080456801	DIODE ERA15-02		4072303908	PHOTO COUPLE PC123Y52
	4080583101	DIODE ERA15-02	D611	4071468113	DIODE EG01C
D1902	4072128818	DIODE KDS160-RTK		4080456603	DIODE EG01C
	4080627201	DIODE 1SS35		4080583804	DIODE EG01C
	4071490817	DIODE 1SS355-TE-17	D612	4070077405	DIODE EU1
				4080457709	DIODE EU1

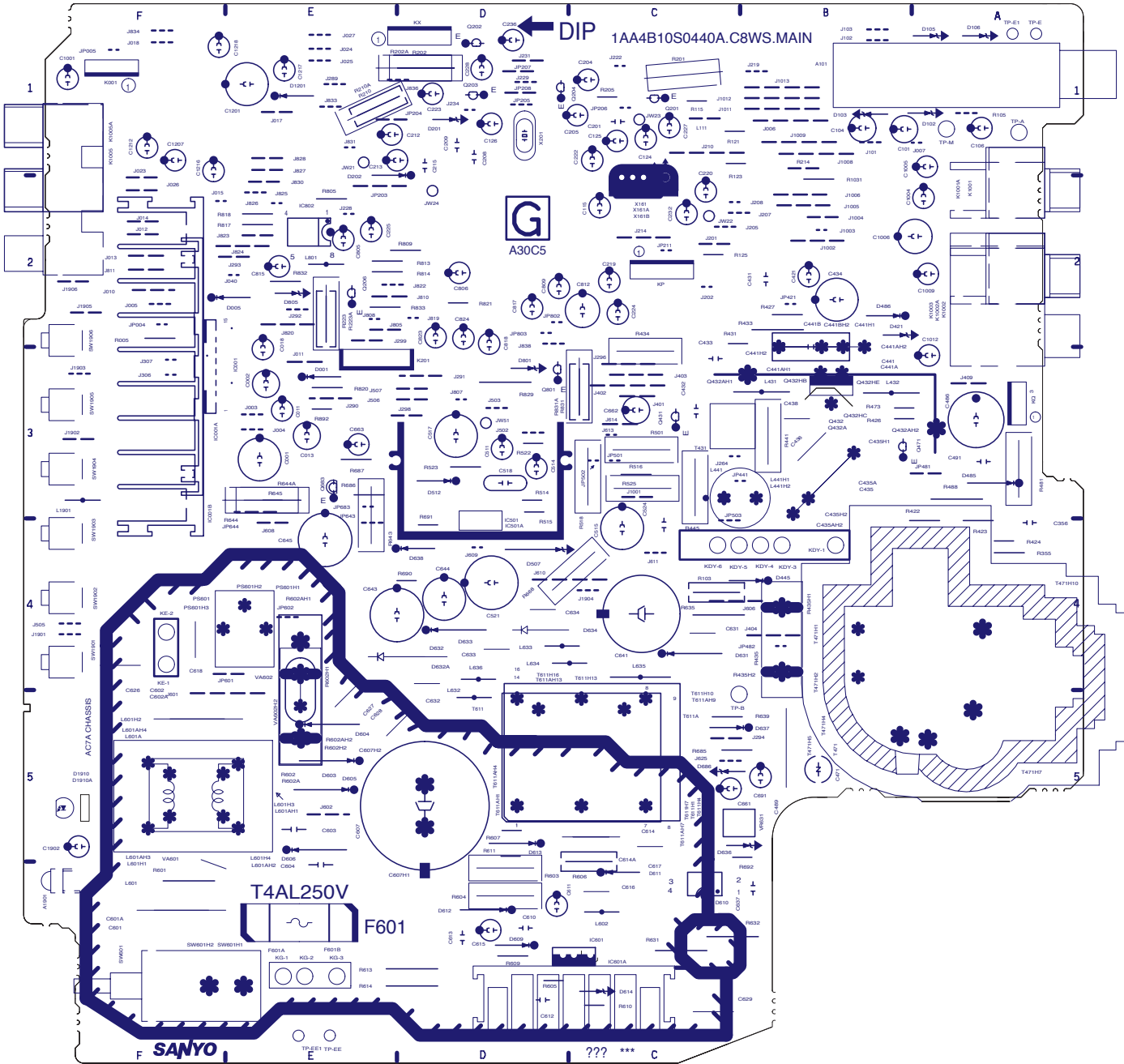


Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
D613	4080584207	DIODE EU1	SW1903	6450034701	SWITCH,PUSH 1P-1TX1
	4070077405	DIODE EU1		6450194887	SWITCH,PUSH 1P-1TX1
	4080457709	DIODE EU1		6520018761	SWITCH,PUSH 1P-1TX1
D614	4080584207	DIODE EU1	SW1904	6450034701	SWITCH,PUSH 1P-1TX1
	4070995422	ZENER DIODE MTZJ6.2B		6450194887	SWITCH,PUSH 1P-1TX1
	4080627409	ZENER DIODE MTZJ6.2B		6520018761	SWITCH,PUSH 1P-1TX1
D631	4070098806	DIODE RU3AM	SW1905	6450034701	SWITCH,PUSH 1P-1TX1
	4080584405	DIODE RU3AM		6450194887	SWITCH,PUSH 1P-1TX1
	4080584405	DIODE RU3AM		6520018761	SWITCH,PUSH 1P-1TX1
D632A	4080633707	DIODE GRU4YX	SW1906	6450034701	SWITCH,PUSH 1P-1TX1
D633	4070077603	DIODE EU2		6450194887	SWITCH,PUSH 1P-1TX1
	4080458102	DIODE EU2Z		6520018761	SWITCH,PUSH 1P-1TX1
	4080583606	DIODE EU2	△ SW601	6450590061	SWITCH, POWER 1P-1TX1
D634	4070098905	DIODE RU3M	△ VA601	4071712008	VARISTOR ERZV14D471
	4080458409	DIODE RU3M		4072471300	VARISTOR SVC471D-07ABW7
	4080584504	DIODE RU3M	X161	4210121906	SAW F TSF6376BL
D636	4070639029	ZENER DIODE MTZJ6.2A		4210115202	SAW F TSF6376Y
	4080477905	ZENER DIODE MTZJ6.2A		4220053907	SAW F SF6376U
D637	4080082406	DIODE 1N4148	X201	6450248801	OSC,CRYSTAL 4.433619MHZ
	4080585600	DIODE 1SS133ST		6450251122	OSC,CRYSTAL 4.433619MHZ
	4070124406	DIODE 1SS133		6450820052	OSC,CRYSTAL 4.433619MHZ
	4070134306	DIODE 1S2076A		6520016842	OSC,CRYSTAL 4.433619MHZ
D638	4080082406	DIODE 1N4148	<b>6103332314 ASSY,PWB,CRT C8WS 1AA0B10S2510B</b>		
	4080585600	DIODE 1SS133ST			
	4070124406	DIODE 1SS133	<b>TRANSISTOR</b>		
	4070134306	DIODE 1S2076A	Q701	4050416507	TR 2SC2621-D-RA
D686	4070995521	ZENER DIODE MTZJ6.2C		4050416705	TR 2SC2621-E-RA
	4070572801	ZENER DIODE RD6.2EB3		4050669903	TR 2SC2688(1)-K
	4080478308	ZENER DIODE MTZJ6.2C-52		4050670008	TR 2SC2688(1)-L
D801	4070639425	ZENER DIODE MTZJ8.2A		4050670107	TR 2SC2688(1)-M
	4080479404	ZENER DIODE MTZJ8.2A	Q703	4050416507	TR 2SC2621-D-RA
D802	4080627003	DIODE 1SS356WS		4050416705	TR 2SC2621-E-RA
	4071661118	DIODE 1SS356-TW11		4050669903	TR 2SC2688(1)-K
D803	4072217116	ZENER DIODE UDZS-TE-1712B		4050670008	TR 2SC2688(1)-L
D805	4070638606	ZENER DIODE MTZJ5.1A		4050670107	TR 2SC2688(1)-M
	4080476403	ZENER DIODE MTZJ5.1A	Q705	4050416507	TR 2SC2621-D-RA
D808	4072217116	ZENER DIODE UDZS-TE-1712B		4050416705	TR 2SC2621-E-RA
D809	4072217116	ZENER DIODE UDZS-TE-1712B		4050669903	TR 2SC2688(1)-K
D816	4072128818	DIODE KDS160-RTK		4050670008	TR 2SC2688(1)-L
	4080627201	DIODE 1SS35	Q721	4051648016	TR KTA1504S-GR-RTK
	4071490817	DIODE 1SS355-TE-17		4051345925	TR 2SA1037AK-T146-R
<b>MISCELLANEOUS</b>				4051472215	TR 2SA1037AK-S-T146
△ F601	4240059507	FUSE 250V 4A		4050020318	TR 2SA1037K T146 R
	4230288603	FUSE 250V 4A		4050020417	TR 2SA1037K T146 S
F601A	6450005077	HOLDER,FUSE		4050026726	TR 2SA1179-M6-TB
	6450705434	HOLDER,FUSE		4050026924	TR 2SA1179-M7-TB
	6520019591	HOLDER FUSE		4051631513	TR 2SA1179N-M6-TB
F601B	6450005077	HOLDER,FUSE		4051739615	TR 2SA1235A1E
	6450705434	HOLDER,FUSE		4051739714	TR 2SA1235A1F
	6520019591	HOLDER FUSE	<b>CAPACITOR</b>		
A101	6450904059	TUNER, U/V	C703	4041046003	CERAMIC 330P K 50V
A1901	6450476228	UNIT,REMOCON RECEIVER		4040913801	CERAMIC 330P K 50V
	6450820465	UNIT,REMOCON RECEIVER		4031576414	CERAMIC 330P K 50V
K1001	6520012974	JACK,RCA-3	C705	4041046003	CERAMIC 330P K 50V
	6520018914	JACK,RCA-3		4040913801	CERAMIC 330P K 50V
K1003	6520015425	JACK,RCA-6		4031576414	CERAMIC 330P K 50V
	6520022751	JACK,RCA-6	C707	4041046003	CERAMIC 330P K 50V
K1005	6520022768	JACK,RCA-3		4040913801	CERAMIC 330P K 50V
	6520015401	JACK,RCA-3		4031576414	CERAMIC 330P K 50V
△ PS601	4080465407	TH PTDCA1BF4R5Q200	C707	4041046003	CERAMIC 330P K 50V
SW1901	6450034701	SWITCH,PUSH 1P-1TX1		4040913801	CERAMIC 330P K 50V
	6450194887	SWITCH,PUSH 1P-1TX1		4031576414	CERAMIC 330P K 50V
	6520018761	SWITCH,PUSH 1P-1TX1	C708	4041093502	CERAMIC 1000P K 2K
SW1902	6450034701	SWITCH,PUSH 1P-1TX1		4040846505	CERAMIC 1000P K 2K
	6450194887	SWITCH,PUSH 1P-1TX1		4030772807	CERAMIC 1000P Z 2K
	6520018761	SWITCH,PUSH 1P-1TX1			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
	4033128334	CERAMIC 1000P Z 2K			
C710	4040981701	ELECT 4.7U M 250V			
	4041094509	ELECT 4.7U M 250V			
	4041094509	ELECT 4.7U M 250V			
<b>RESISTOR</b>					
R701	4010278107	CARBON 82 JA 1/6W			
	4021089105	CARBON 82 JA 1/6W			
	4020945105	CARBON 82 JA 1/6W			
R702	4012567516	MT-GLAZE 390 JA 1/10W			
	4011054512	MT-GLAZE 390 JA 1/16W			
R704	4012559016	MT-GLAZE 82 JA 1/10W			
	4011057216	MT-GLAZE 82 JA 1/16W			
R705	4012567516	MT-GLAZE 390 JA 1/10W			
	4011054512	MT-GLAZE 390 JA 1/16W			
R707	4010278107	CARBON 82 JA 1/6W			
	4021089105	CARBON 82 JA 1/6W			
	4020945105	CARBON 82 JA 1/6W			
R708	4012567516	MT-GLAZE 390 JA 1/10W			
	4011054512	MT-GLAZE 390 JA 1/16W			
R711	4010654505	OXIDE-MT 12K JA 2W			
R712	4010654505	OXIDE-MT 12K JA 2W			
R713	4010654505	OXIDE-MT 12K JA 2W			
R715	4010091508	CARBON 2.7K JA 1/2W			
	4021033207	CARBON 2.7K JA 1/2W			
	4020924308	CARBON 2.7K JA 1/2W			
R716	4010091508	CARBON 2.7K JA 1/2W			
	4021033207	CARBON 2.7K JA 1/2W			
	4020924308	CARBON 2.7K JA 1/2W			
R717	4010091508	CARBON 2.7K JA 1/2W			
	4021033207	CARBON 2.7K JA 1/2W			
	4020924308	CARBON 2.7K JA 1/2W			
R723	4012560012	MT-GLAZE 120 JA 1/10W			
	4011050910	MT-GLAZE 120 JA 1/16W			
R724	4011623619	MT-GLAZE 470 JA 1/10W			
	4011055212	MT-GLAZE 470 JA 1/16W			
R732	4010246403	CARBON 10 JA 1/6W			
	4021033108	CARBON 10 JA 1/6W			
	4021021006	CARBON 10 JA 1/6W			
R743	4010249701	CARBON 12K JA 1/6W			
	4021027206	CARBON 12K JA 1/6W			
	4020940100	CARBON 12K JA 1/6W			
<b>COIL</b>					
L702	6450079689	INDUCTOR, 150U K			
<b>DIODE</b>					
D741	4072128818	DIODE KDS160-RTK			
	4080627201	DIODE 1SS35			
	4071490817	DIODE 1SS355-TE-17			
D742	4072128818	DIODE KDS160-RTK			
	4080627201	DIODE 1SS35			
	4071490817	DIODE 1SS355-TE-17			
<b>MISCELLANEOUS</b>					
△K701	6520017726	SOCKET, CRT 8P			

# Component Locations

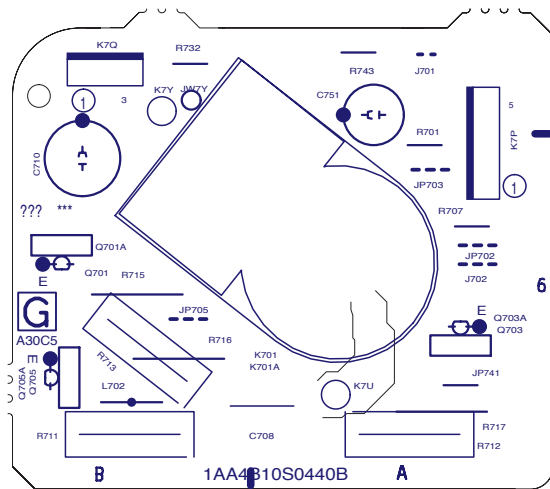
## Main Board (Parts Side)





# Component Locations

## CRT Board (Parts Side)



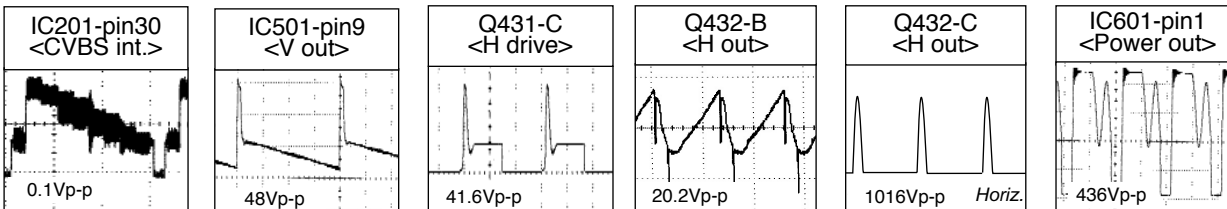
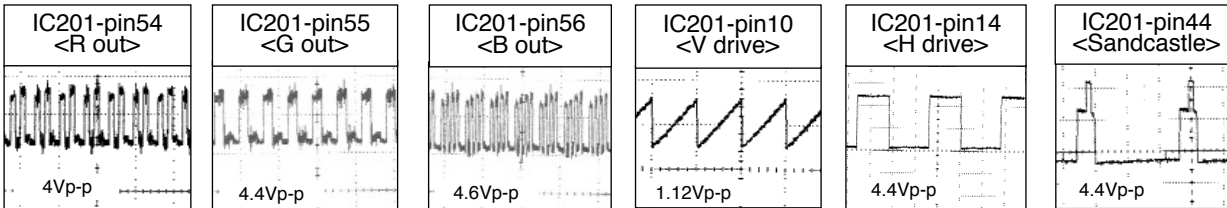
# Voltages and Waveforms Charts

**Note:** Voltages and waveforms were measured with colour bar signal and controls adjusted for normal picture.

## Main Board

<b>Q1001</b> E 4.9V C 0V B 4.2V	<b>Q1002</b> E 4.9V C 0V B 3.5V	<b>Q1003</b> E 2.4V C 7.6V B 3.1V	<b>Q111</b> E 0.5V C 4.4V B 1.2V	<b>Q122</b> E 0V C 0V B 0.6V	<b>Q1901</b> E 4.9V C 0.8V B 4.9V	<b>Q202</b> E 5V C 7.5V B 5.7V	<b>Q203</b> E 7.9V C 11.1V B 8.5V	<b>Q206</b> E 1.7V C 11.9V B 2.3V	<b>Q431</b> E 0V C 15V B 0.5V	<b>Q432</b> E 3.5V C 340V B 4.0V
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<b>Q471</b> E 130V C 28V B 130V	<b>Q472</b> E 0V C 2.8V B 0V	<b>Q511</b> E 0V C 2.8V E 0V	<b>Q631</b> E 6.2V C 11.9V B 6.8V	<b>Q632</b> E 0V C 7.9V B 0V	<b>Q683</b> E 26.3V C 26.2V B 25.6V	<b>Q684</b> E 0V C 0V B 0.6V	<b>Q802</b> E 3.4V C 0V B 3.2V	<b>Q886</b> E 0V C 0V B 0.6V	<b>Q801</b> E 3.4V C 12.5V B 4.1V
--	---------------------------------------	---------------------------------------	--	---------------------------------------	--	---------------------------------------	---	---------------------------------------	--



<b>IC001 (AUDIO AMP.)</b>																	
Pin-1	0V	2	11.9V	3	0.7V	4	0V	5	0.7V	6	3.9V	7	0V	8	0V	9	11.5V
10	5.6V	11	0V	12	5.7V	13	0V	14	5.5V	15	0V						

<b>IC1200 (AUDIO CONTROL)</b>																	
Pin-1	3.6V	2	3.6V	3	3.6V	4	3.6V	5	3.6V	6	3.6V	7	3.6V	8	3.6V	9	3.6V
10	3.6V	11	3.6V	12	0V	13	0V	14	0V	15	7.2V	16	7.2V	17	3.4V	18	3.4V
19	3.6V	20	3.6V	21	3.6V	22	3.6V	23	3.6V	24	NC	25	3.6V	26	3.6V	27	0V
28	0V																

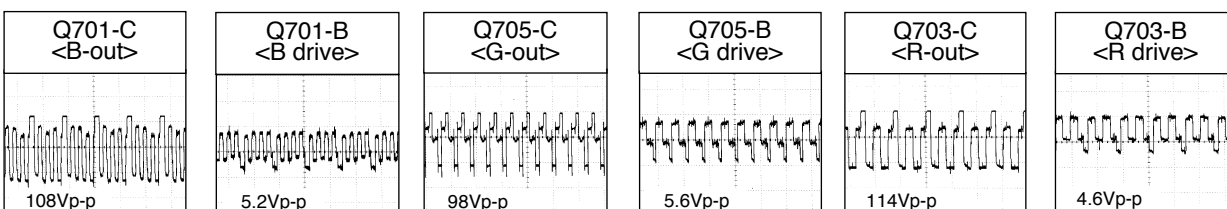
<b>IC501 (VERT. OUT)</b>													
Pin-1	0V	2	26.0V	3	0.9V	4	GND	5	11.5V	6	25.2V	7	2.1V

<b>IC601 (POWER)</b>										
Pin-1347V~	2	0V	3	19.3V	4	0V	5	1.3V	6	0.8V

<b>IC802 (MEMORY)</b>															
Pin-1	GND	2	GND	3	GND	4	GND	5	5V	6	5V	7	0V	8	5V

## CRT Board

<b>Q701</b> E 2.5V C -11.4V B 2.9V	<b>Q703</b> E 2.4V C -12V B 2.8V	<b>Q705</b> E 2.3V C 12V B 2.9V	<b>Q721</b> E 1.1V C 0V B 0.7V
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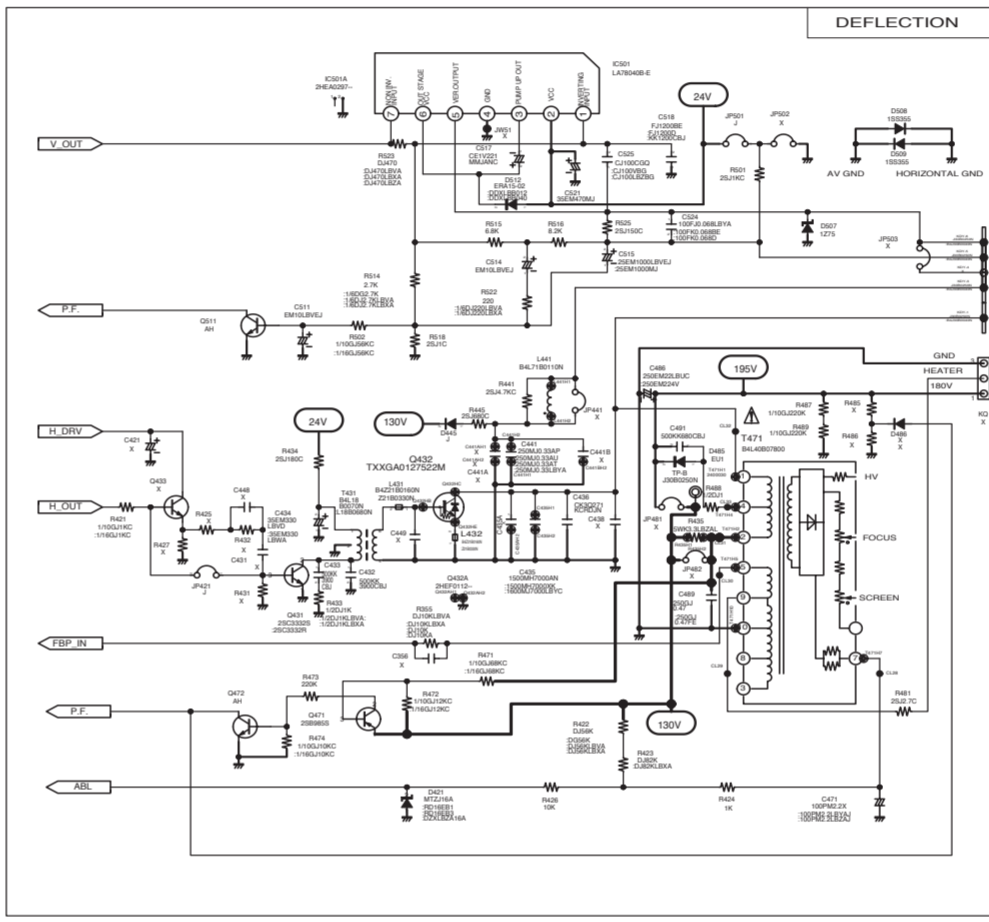
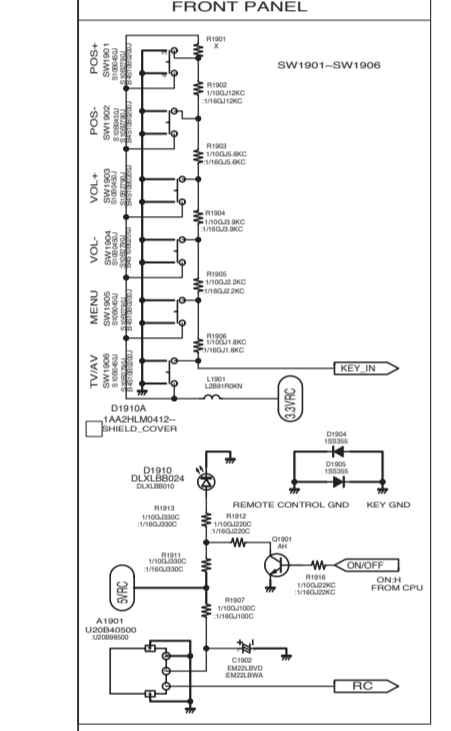
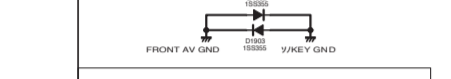
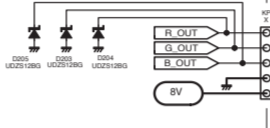
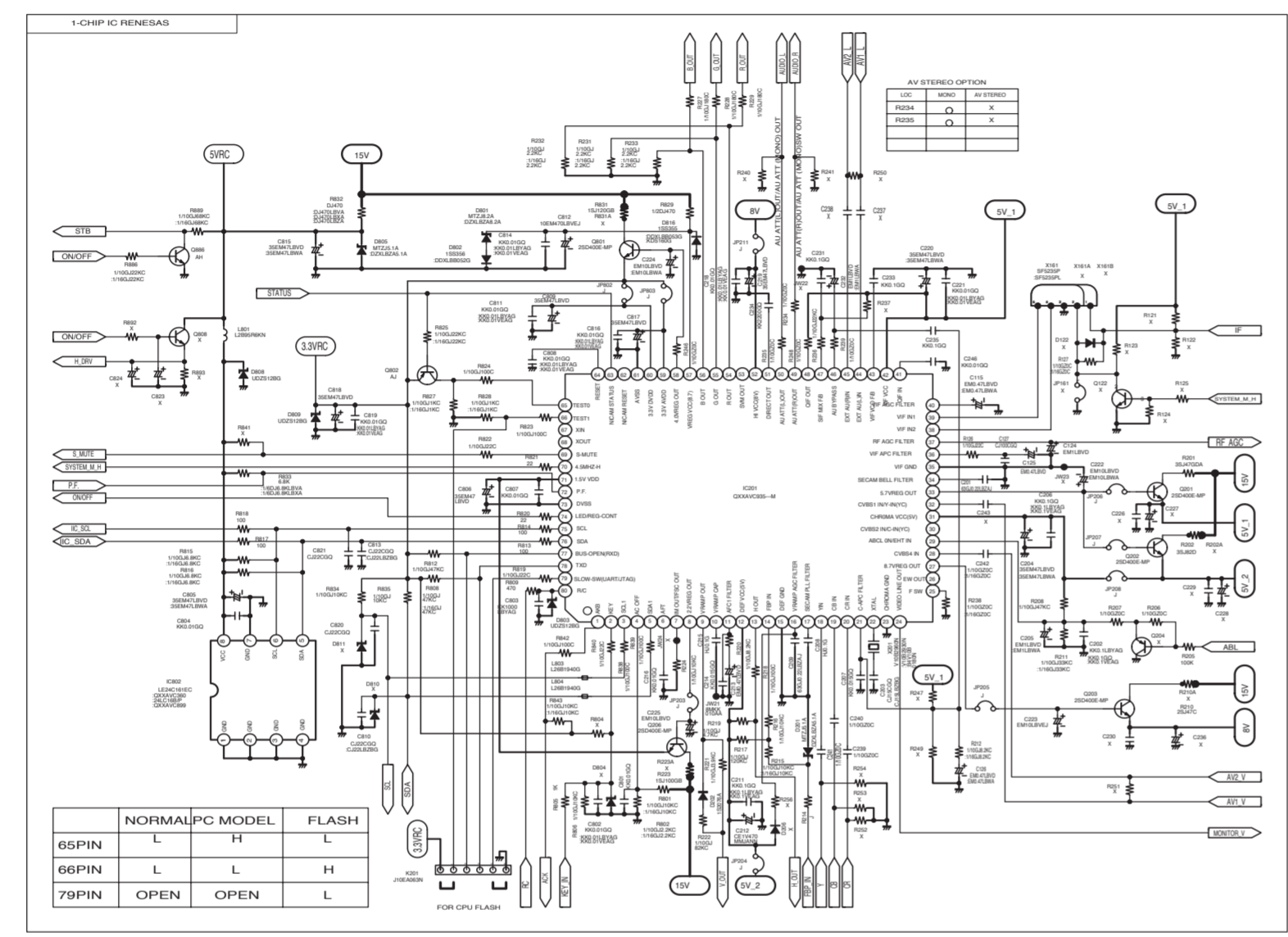
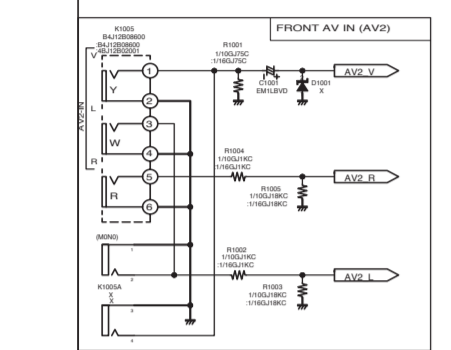
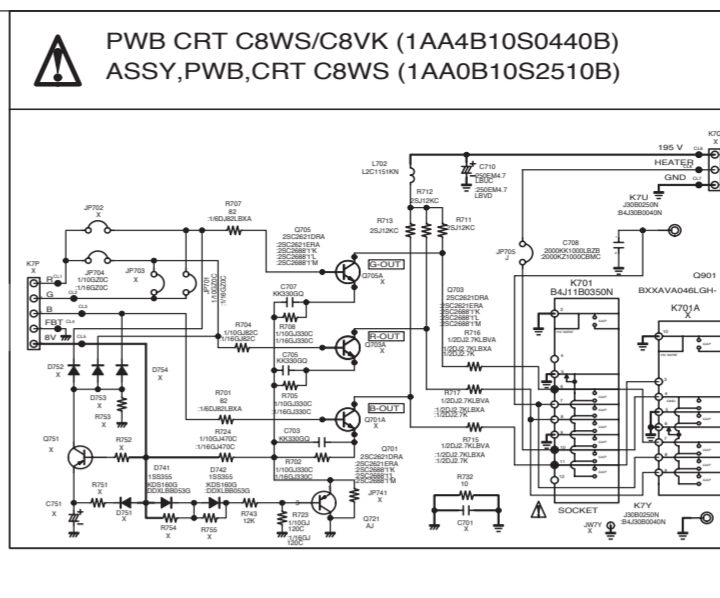
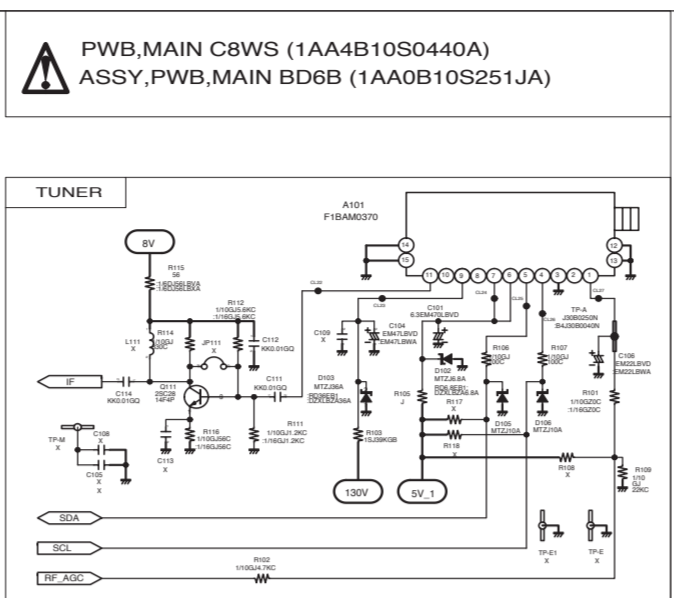
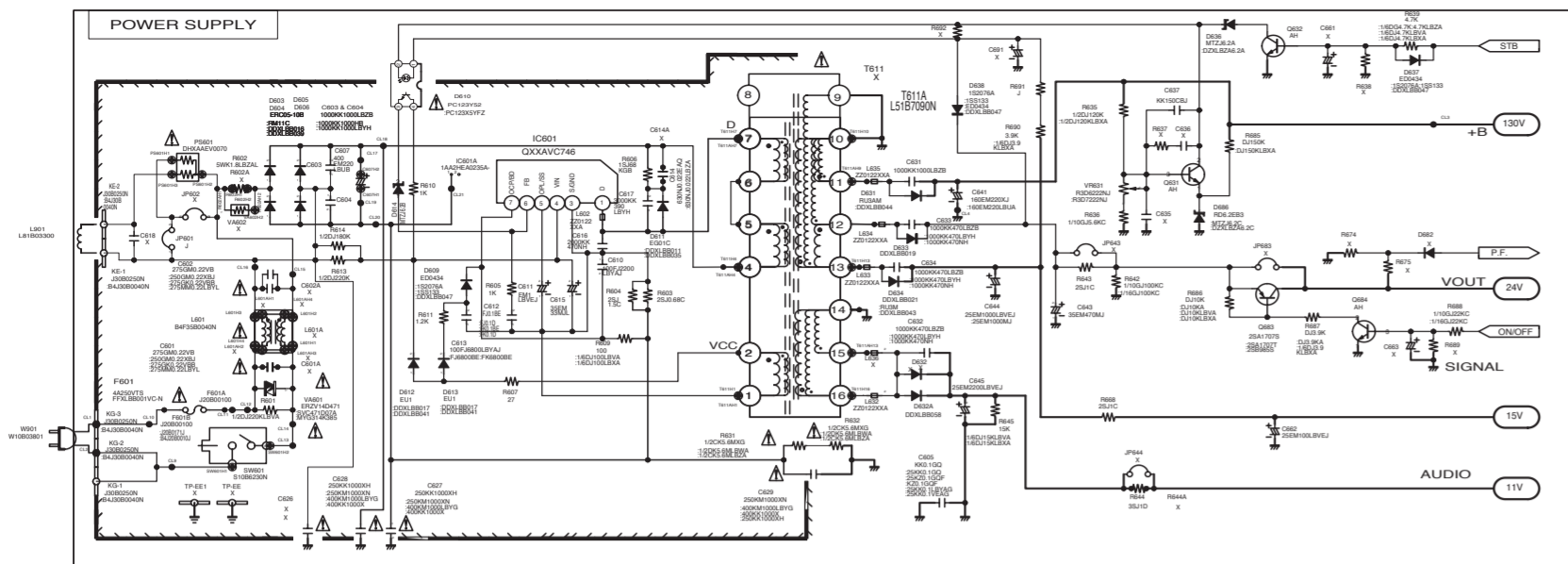






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SANYO Electric Co., Ltd.  
Printed In Thailand



LIST OF REPLACEABLE TRANSISTORS

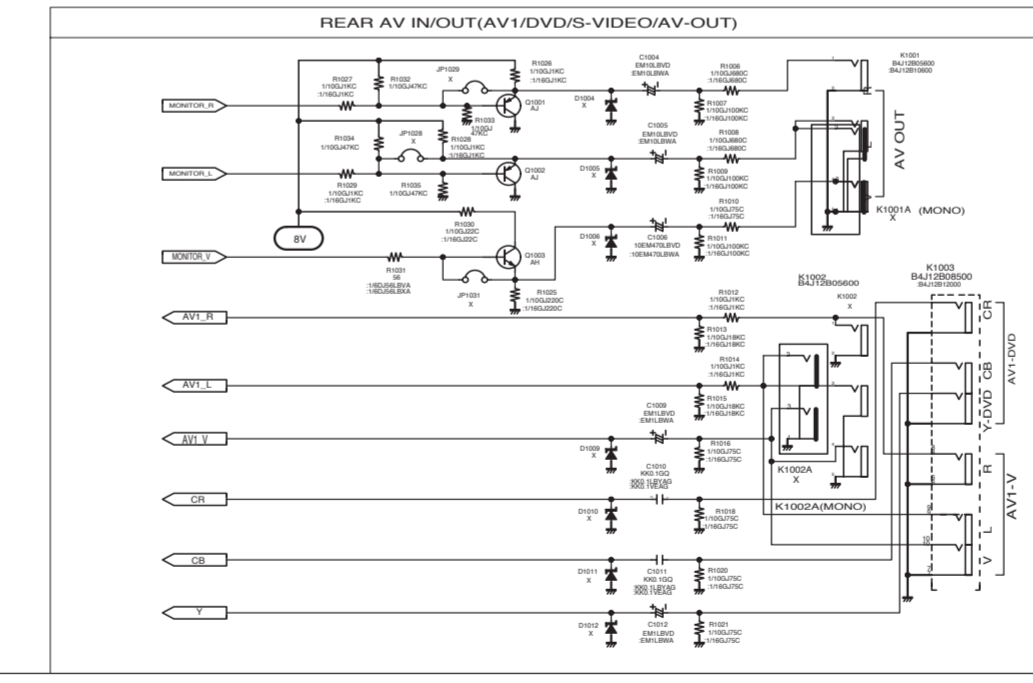
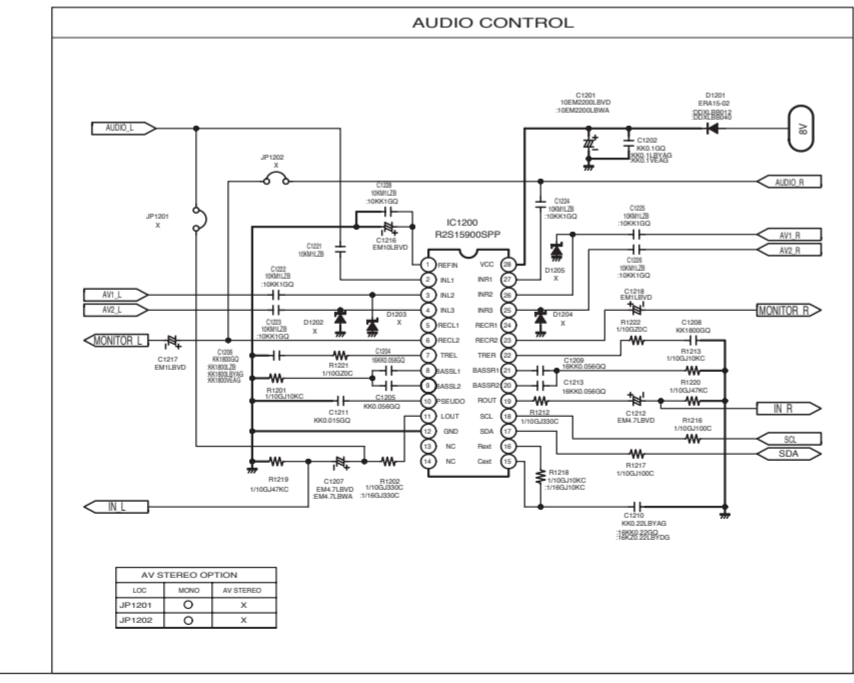
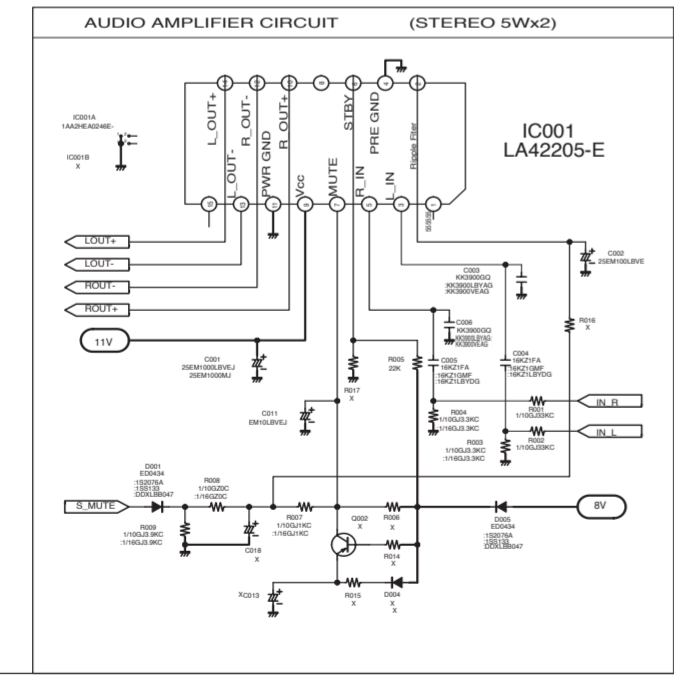
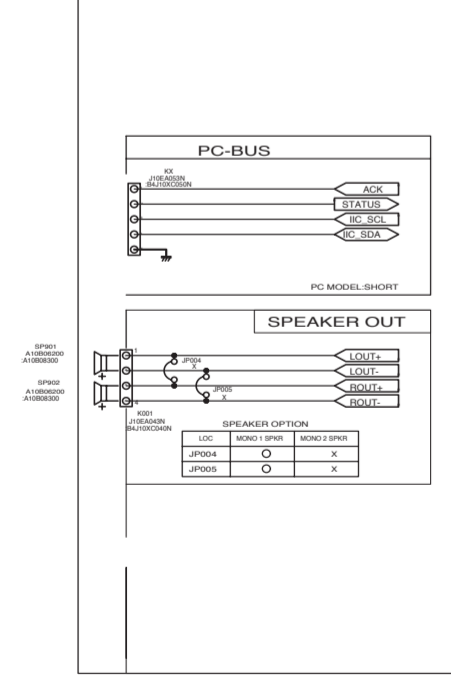
TRANSISTOR TYPE	14TH CODE	25A838	25A1015	25A844
AV	7Y50181	B	V.G.P.	B
AV	7Y50182	CR	V.G.P.	CR
25A1015K CRP TYPE				
TRANSISTOR TYPE	14TH CODE	25A1119	25A1027	25A1027
AV	7Y50251	ME.MY	ELS	ELS
25A1027K CRP TYPE				
TRANSISTOR TYPE	14TH CODE	25C17408	25C2454	25C1815
AV	7Y50215	GR.S	GA.PA	Y.G.P.
AV	7Y50202	GR.S	HA.GA.PA	O.Y.G.P.
25C17408K CRP TYPE				
TRANSISTOR TYPE	14TH CODE	25C2812	25C2476	
AV	7Y50202	LE.L7	MS	

LIST OF REPLACEABLE DIODES

DIODE CODE	DIODE NAME
D	2000011
DA	1000010
DB	1000010
DC	1000010
DD	1000010
DE	1000010
DF	1000010

DIFFERENCES PARTS LIST

MODEL	11P	MAIN UNIT	CRT UNIT
CRWM	013CRWM	1A40810S2510A	1A40810S2510B
CRKA	013CRWM	1A40810S2510A	1A40810S2510B



**THE SERVICE PRECAUTION:**  
The area enclosed by this line ( ) is directly connected with AC mains voltage. When servicing the area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

**PRODUCT SAFETY NOTICE:**  
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark Δ in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

**CIRCUIT DIAGRAM NOTICE:**

- All resistance value are in ohms, K=1,000, M=1,000,000.
- All resistance rated wattages are 1/6W unless otherwise noted.
- Excepting electrolytic capacitors, all capacitance values of less than 1 are expressed in μF and more than 1 are pF.
- All capacitance rated voltages are 50V unless otherwise noted.
- All inductance values are in μH.
- Voltage readings take with a "VTVM" are from point indicated chassis ground. Voltage readings taken by using PAL colour bar signal are with all controls at normal position. Some voltage may vary with signal strength.
- Waveform were taken with PAL colour bar and controls adjusted for normal picture. Waveforms were taken by using a wide band oscilloscope and a low capacity probe.
- This circuit diagram covers a basic or representative chassis only. There may be some components or partial circuit differences between the actual chassis and the circuit diagram.
- Parts specified with "X" are not installed in this model.
- Parts specified with "J" are just jumper wires.

**11. Expression of capacitance and resistance in circuit diagrams.**

Capacitance (Example)  
1000 C M 2000 D

Resistance (Example)  
1/2 N J 1.2

Characteristics:  
J= ± 5%  
K= ± 10%  
M= ± 20%T, A, U, D: Electrolytic  
C, K, B: Ceramic  
F: Mylar film  
M, N: Polypropylene  
Z: Metallized paper  
D: Carbon  
N: Metallized carbon  
S: Oxided metalized  
W: Wire winding  
C: Solid

**TRANSISTOR, DIODE AND INTEGRATED CIRCUIT TERMINAL GUIDE**

C: COLLECTOR, A: ANODE, □: CHIP COMPONENTS  
B: BASED, K: KATHODE, ○: TRANSISTOR  
E: EMITTER, N: NO. 1, ○: DIODE  
RESISTOR 1/2 W 1/4 W

**PARTICULAR PARTS SYMBOL**

○: FUSIBLE RESISTOR  
□: NON POLED ELECTRIC CAPACITOR  
□: POSISTER